RAND EUROPE

Strategic advantage in a competitive age

Definitions, dynamics and implications

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Published by the RAND Corporation, Santa Monica, Calif., and Cambridge, UK

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Preface

This is the draft report of phase one of a study led by RAND Europe – part of the RAND Corporation, a non-partisan, not-for-profit research organisation – and commissioned by the Secretary of State's Office for Net Assessment and Challenge (SONAC) within the UK Ministry of Defence (MOD).

Overall, the study is aimed at supporting the MOD and other UK government departments and agencies in developing a more comprehensive understanding and definition of 'strategic advantage' – a key concept within the 2021 Integrated Review of Security, Defence, Development and Foreign Policy (the IR) and related documents such as the Defence Command Paper and the Integrated Operating Concept (IOpC). Ultimately, this will contribute to ensuring commonality of understanding on the meaning and dynamics of strategic advantage and providing a conceptual basis upon which future strategic, policy and capability priorities can be established.

The analysis contained in this report is informed by twelve historical case studies, which are included as annexes. Based on the lessons and conclusions derived from these real-world examples, as well as subsequent rounds of research and analysis, this report discusses the complex nature and dynamics of strategic advantage and their implications for the UK in an age of intense strategic competition.

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Executive summary

The concept of 'strategic advantage' is central to UK strategy and policy, but there is no universally agreed definition of what exactly it is, what it comprises and how it works

The UK Government's Integrated Review of Security, Defence, Development and Foreign Policy (the IR) frames the current age as one characterised by systemic competition expanding across multiple spheres – both across the operational domains (land, sea, air, cyber and electromagnetic, and space) and in the technology landscape and information environment more broadly. Within these spheres, actors use an increasingly wide range of levers, such as information operations, proxies or economic statecraft, often as part of an effort to achieve objectives without open confrontation or conflict. This includes by modifying the rules and norms governing conduct, and by embracing the ambiguity and deniability of the 'grey zone'.

Strategic competition and strategic advantage are, therefore, foundational ideas on which current UK strategy and policy are built, and which are supposed to guide future concept, force and capability development and investment decisions. However, they are also contested and under-theorised concepts that have no common agreed definition across the UK government or, more narrowly, across the defence and security establishment. This means that ends, means and ways are not accurately delineated. This, in turn, can lead to strategies, policies, plans and behaviours being built on faulty assumptions. It can also mean that policymakers fail to establish clear priorities, and find themselves unable to measure progress or success and thereby evaluate and refine implementation of strategy documents such as the IR.

This MOD requires a more robust theoretical and empirical understanding of 'strategic advantage' based on the latest academic thinking and lessons learned

Ongoing efforts across Whitehall are meant to enable a more comprehensive understanding of what constitutes advantage in a competitive setting, what conditions influence it, and what criteria can be used to measure its possession or use and its success in influencing strategic outcomes. In turn, this is meant to provide a conceptual basis upon which policymakers can identify strategic priorities, as well as provide nuance to how strategic advantage can be enhanced to support and achieve the UK's stated goals.

As a starting point for further analysis, the Secretary of State's Office for Net Assessment and Challenge (SONAC) within the UK Ministry of Defence developed a working definition, as shown in Figure 0.1.

Figure 0.1 SONAC's initial working definition of strategic advantage

STARTING POINT: strategic advantage

"The relative ability of an actor to achieve their strategic objectives in a given situation, compared to a competitor or competitors."

Source: SONAC.

Given these conceptual and definitional issues, SONAC commissioned a team of RAND experts and academic researchers to offer an independent, evidence-based perspective

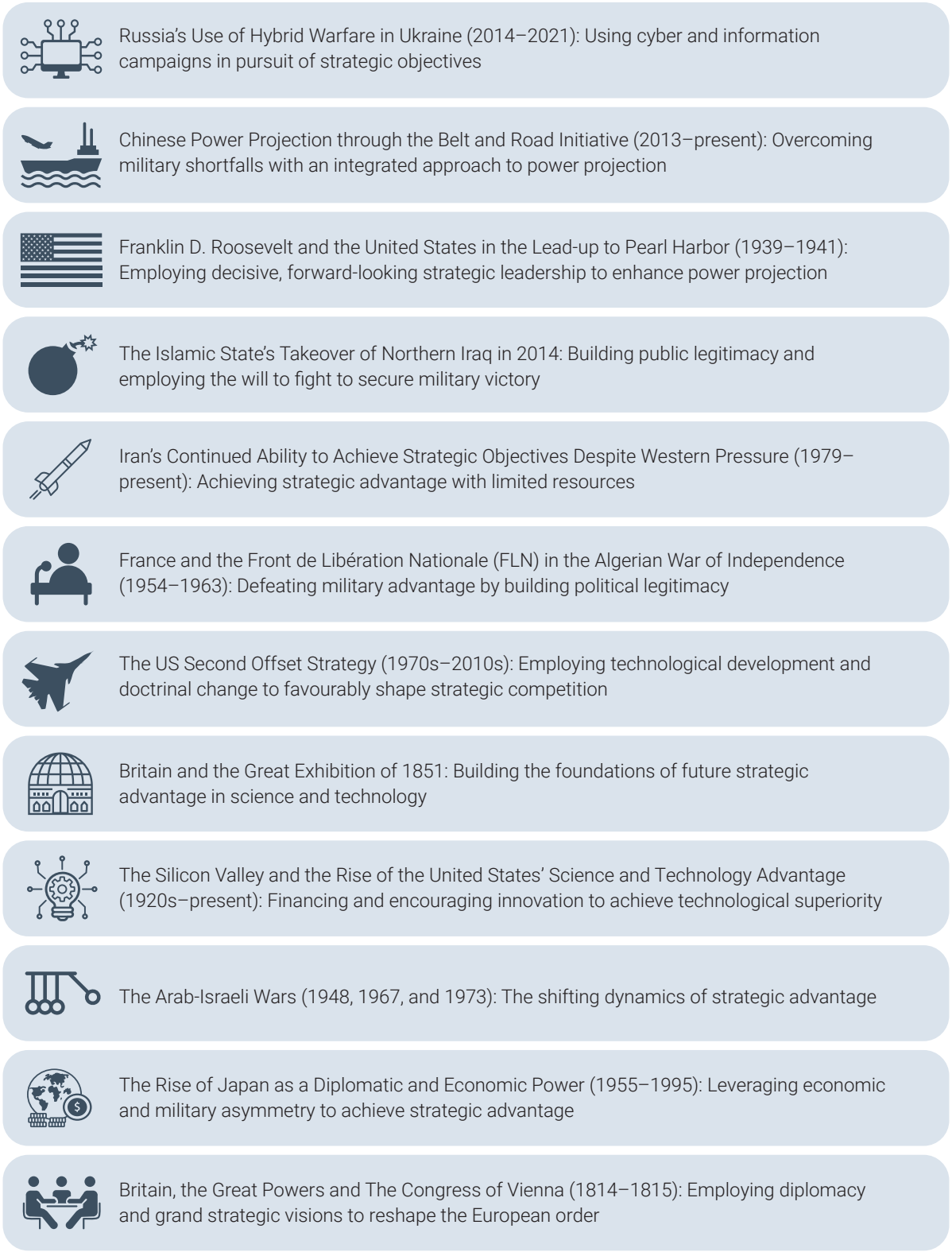
With support from the Defence Science and Technology Laboratory (Dstl), SONAC sponsored an external research team to stress-test and, if necessary, refine the current working definition of strategic advantage. The RAND Europe-led team, which also drew in leading UK academics, did so through application of a multi-method research approach. This involved development of a series of 12 case studies and expert workshops. These explored the types of advantage held by different actors, the ways in which these can been gained and/or lost, and the ways in which actors seek to maintain and exploit their advantages in practice.

Any theory of strategic advantage must ultimately be understood in light of intensifying competition across the continuum from cooperation through to armed conflict and war

Chapter 2 of this report reviews official strategy and policy, as well as academic literature, and seeks to better understand strategic advantage in relation to related concepts and terminology. Its findings indicate that:

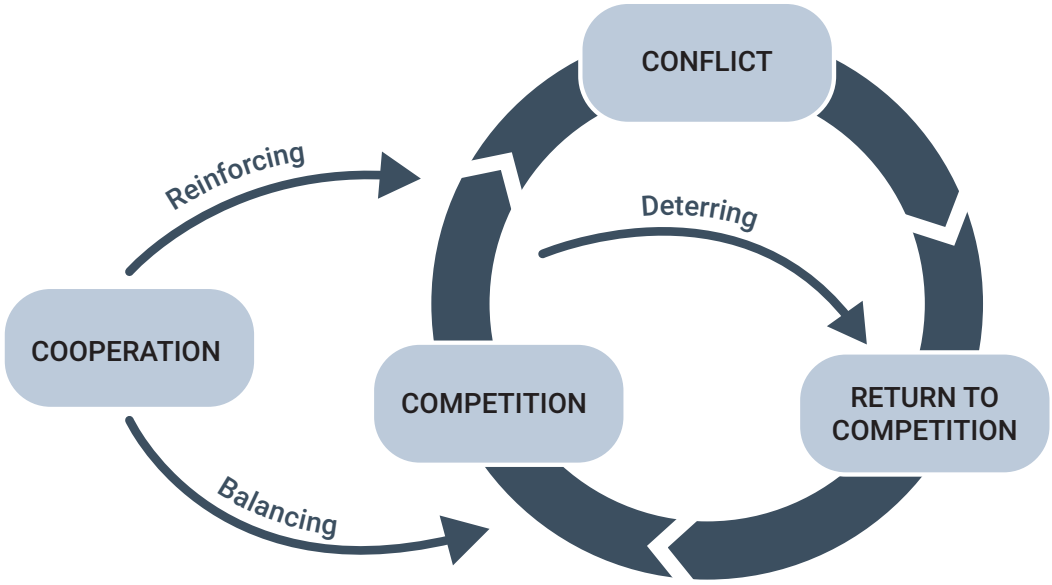
- **There is no universally agreed definition of strategy itself,** complicating matters from the outset when seeking to better understand strategic advantage. Nonetheless, many of the guiding principles of strategic thinking may provide useful lessons when thinking about how to define, gain and use advantage – emphasising themes such as advantage's fleeting nature, the enduring impact of chance on strategic outcomes, and the need to differentiate between a general position of advantage (supporting a strategy 'in the milieu') and a context-specific one (supporting a positional strategy).
- **Strategic advantage should be understood through the lens of renewed great power competition,** including advantage-seeking in the 'grey zone' short of war. Competition should be understood in terms of a continuum of possible hostile or friendly relations between two or more actors, including elements of cooperation but also the ever-present risk of escalation to outright war. This continuum has all sorts of complex feedback loops, which actors must seek to navigate in their favour.
- **Where possible, actors will seek to reframe competition to give greater weight to areas where they are strong, and de-emphasise areas where they are weak.** In addition to modifying the rules of the international system, actors may also seek to increase or dampen the intensity of strategic competition to their advantage.

Figure 0.2 Overview of the case studies developed for the project


Russia's Use of Hybrid Warfare in Ukraine (2014–2021): Using cyber and information campaigns in pursuit of strategic objectives
Chinese Power Projection through the Belt and Road Initiative (2013–present): Overcoming military shortfalls with an integrated approach to power projection
Franklin D. Roosevelt and the United States in the Lead-up to Pearl Harbor (1939–1941): Employing decisive, forward-looking strategic leadership to enhance power projection
The Islamic State's Takeover of Northern Iraq in 2014: Building public legitimacy and employing the will to fight to secure military victory
Iran's Continued Ability to Achieve Strategic Objectives Despite Western Pressure (1979–present): Achieving strategic advantage with limited resources
France and the Front de Libération Nationale (FLN) in the Algerian War of Independence (1954–1963): Defeating military advantage by building political legitimacy
The US Second Offset Strategy (1970s–2010s): Employing technological development and doctrinal change to favourably shape strategic competition
Britain and the Great Exhibition of 1851: Building the foundations of future strategic advantage in science and technology
The Silicon Valley and the Rise of the United States' Science and Technology Advantage (1920s–present): Financing and encouraging innovation to achieve technological superiority
The Arab-Israeli Wars (1948, 1967, and 1973): The shifting dynamics of strategic advantage
The Rise of Japan as a Diplomatic and Economic Power (1955–1995): Leveraging economic and military asymmetry to achieve strategic advantage
Britain, the Great Powers and The Congress of Vienna (1814–1815): Employing diplomacy and grand strategic visions to reshape the European order

Source: RAND Europe.

Figure 0.3 Feedback loops across the continuum of cooperation-competition-conflict



Source: RAND Europe, adapted from McCoy (2018).

Any concept of strategic advantage should, therefore, be linked to a theoretical and practical appreciation of the dynamics of competition and how to reshape them.

Real-world case studies provide further nuance to this theoretical understanding of strategic advantage

Chapter 3 builds on the theoretical foundations laid by Chapter 2, reviewing the historical record to gain empirical data and insights on the dynamics of strategic competition and advantage in the real world. It summarises key findings from the case studies, which are also provided in full in Annex D. These emphasise:

- **The dynamic and relational nature of advantage.** This reflects the fact that many individual 'strands' of advantage (e.g. across the political, economic, social, technological, legal, environmental and military spheres [PESTLE-M]) may offer more or less leverage over a competitor depending on the situation. Furthermore, some advantages are likely to be fleeting, being quickly eroded by attempts to counter them, or offset them through shifting focus to areas more favourable to a competitor's own strengths and weaknesses – again, reshaping the dynamics of strategic competition.
- **The importance of perception and signalling** to determining and demonstrating the subjective value of a given strategic advantage to target audiences. This links the concept of strategic advantage closely to deterrence theory, as well as efforts to manage the escalation ladder in the UK's favour.
- **The fact that strategic competition and advantage can be directed at allies and partners,** not just at adversaries. In turn, allies and partners can contribute to the UK's own position of advantage, acting as a force multiplier – while also introducing their own complex dynamics to manage.

Building on insights from official strategy and policy documents, academic literature and real-world case studies, this report proposes a new definition of strategic advantage

Based on the findings of this report, the RAND team assessed that the working definition of strategic advantage provided at the outset of this study has merit, but appears imprecise in the following ways:

- **It does not differentiate between a position of overall advantage and the individual strands** of advantage that comprise it.
- **It does not reflect the context- and time-dependent nature of individual strands of advantage,** and it does not consider the dynamic nature of competition and of the strategic environment in general.
- **It does not reflect the fact that strategic advantage can be pursued in relation to allies and partners,** who can be viewed as friendly competitors, as opposed to a narrower focus on adversaries.

Accordingly, this study proposes a revised definition to reflect more accurately and clearly the main characteristics of strategic advantage (see Chapter 4 and Figure 0.4) to help support activities such as strategy making, strategic net assessment and benchmarking. These include both:

- **Characteristics that influence an actor's potential for advantage** (i.e. their raw capacity in terms of resources, size of economy, population, geography, etc.).
- **Characteristics and practices that influence an actor's propensity for advantage** (i.e. their ability to translate a greater or lesser per cent of that maximum theoretical potential into real-world outputs [influence, military effect, etc.], based on the efficiency of their state apparatus and the dynamism of their national industry, academia and wider society.)

This refinement of the concept of strategic advantage has the potential to inform ongoing efforts to continuously review, test and refresh the theory of success and associated evidence base, and assumptions underpinning defence strategy, policy and investment decisions. This includes how to prioritise finite resources for force and capability development or for research and development; as well as how to communicate a shared understanding of strategic competition and advantage across government and to international allies and partners and other audiences (including to deter the UK's major competitors).

Real-world case studies provide important lessons on how the UK can achieve and maintain a position of strategic advantage

Armed with this conceptual understanding of strategic advantage, Chapter 5 offers a more practical discussion of the types of ways in which advantage might be achieved in the real world, and what might be the most prudent strategy for the UK – and for the MOD – in the face of intensifying competition.

The historical case studies summarised in Chapter 3 and contained in Annex D describe a wide variety of situations in which a range of actors utilised individual strands of advantage across the PESTLE-M framework. While no nation can fully anticipate which of its levers may be most relevant to future competition, or leverage its full potential with perfect efficiency, governments can focus on increasing their nation's overall propensity for advantage – effectively, a measure of that nation's productivity as a strategic competitor. Maximising a nation's potential and propensity for advantage is ultimately an exercise in the orchestration of different levers of influence and relationships with key stakeholders, through which central government can better

Figure 0.4 Proposal for a revised definition and concept of strategic advantage

Original definition

"The relative ability of an actor to achieve their strategic objectives in a given situation, compared to a competitor or competitors."

Revised definition

"A position of strategic advantage is one in which an actor is more likely than others (whether hostile or friendly) to achieve their objectives in a given contest, crisis or conflict, having influenced the dynamics of competition in their favour and maximised the relevance of their own areas of asymmetric advantage across all levers of power."

Elaboration

It is the net result of continuous and non-linear efforts by all parties to:

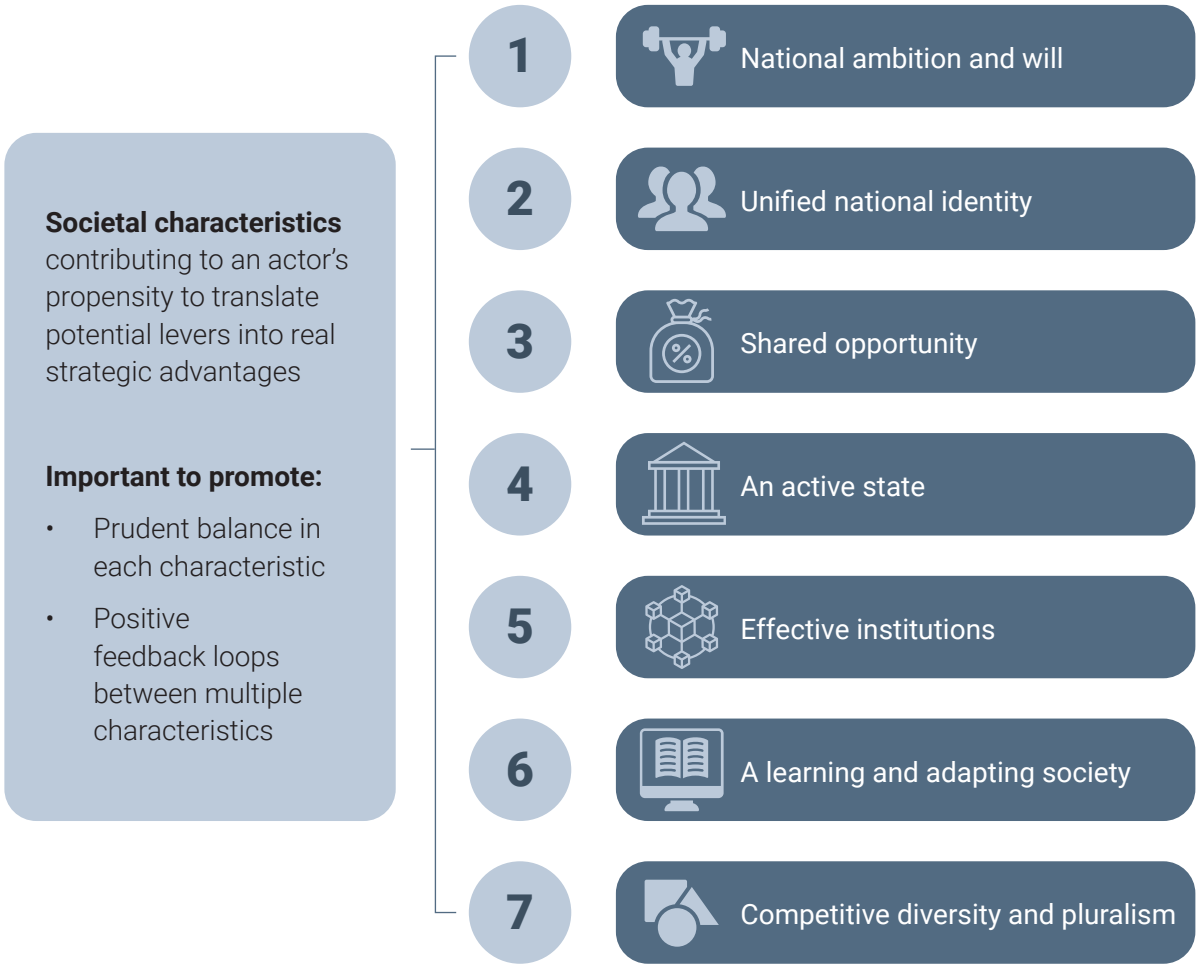
1. **Learn a complex game with ever-changing rules:** Identifying the prevailing conditions within the international system that shape the dynamics of competition.
2. **Rig the odds in their favour:** Based on this understanding of competition dynamics, both:
   - A. **Fix the rules:** If the dynamics are unfavourable, reshaping them to benefit the actor's areas of relative strength and downplay weaknesses. If the dynamics are already favourable, defending the status quo from revisionism.
   - B. **Play the best possible hand:** If competition dynamics cannot be changed, trying to cultivate new strengths or mitigate existing weaknesses. Developing, orchestrating and employing individual strands of advantage across all levers of power (i.e. making and implementing effective strategy). The aim is to maximise the actor's *propensity* for advantage – meaning the efficiency with which they can turn their national *potential* (e.g. given available resources, geography and other enablers or constraints) into relevant outputs. This determines the outcomes the actor can realistically hope to achieve given the imperfect translation of their theoretical *potential* into their actual *performance* in a real-world contest, crisis or conflict.
3. **Influence the play of others:** Anticipating and influencing the perceptions, decisions and actions of others (e.g. through deterrence, coercion, bluffs, persuasion or co-option), as well as how they interact with third parties in a multipolar system.
4. **Mitigate losses and exploit openings:** Avoiding defeats that would entail an end to competition (e.g. nuclear war), absorbing and recovering from other losses, and seizing windows of opportunity that arise from other actors' mistakes or misfortune.
5. **Repeat:** Revisiting the assumptions and approach based on competition outcomes (as the actor perceives them, whether from general trends or wins/losses of specific crises).

Source: RAND Europe analysis.

grow, access and marshal the resources (i) of both the public and private sectors and of wider society at home, and (ii) of allies and partners internationally. The results of this study complement a wider historical analysis undertaken in a recent large RAND study for the US Department of Defense, which identified a number of societal characteristics that are especially influential in determining whether a nation can effectively mobilise its full potential for advantage, as outlined in Figure 0.5 below.

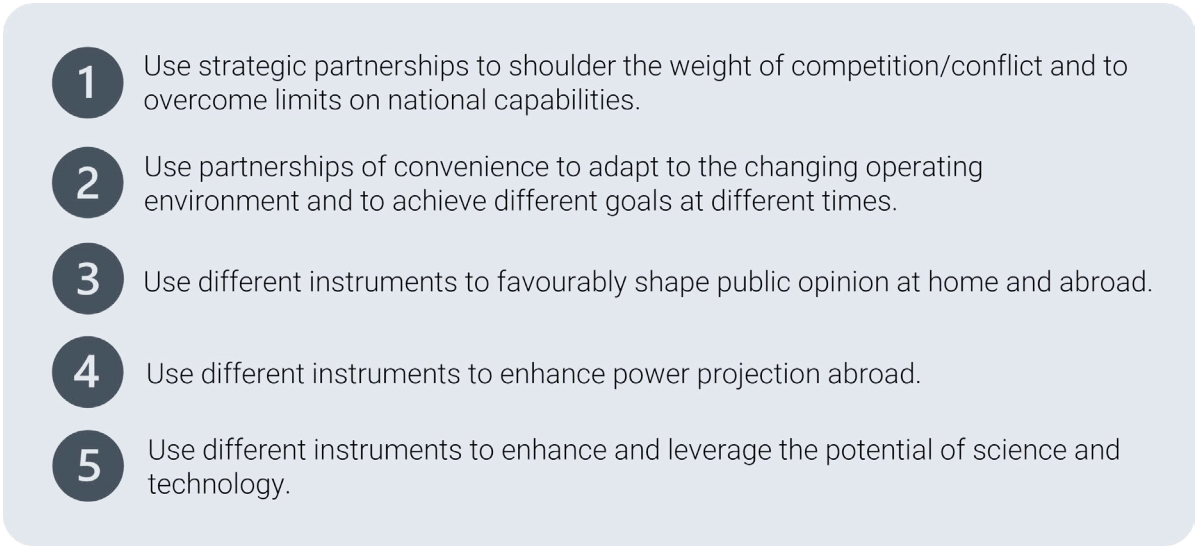
Alongside these characteristics, the findings of this project also suggest an indicative set of practical lessons about the types of policy interventions and behaviours that have been associated with achieving advantage in real-world historical cases. This has created preliminary suggestions for types of ways in which the UK might enhance its own position to achieve advantage, as outlined in Figure 0.6 and described in more detail in the final chapters of the report and its annexes.

Figure 0.5 Examples of societal characteristics associated with translating potential into advantage



Source: RAND Europe adapted from Mazarr (2022a).

Figure 0.6 Preliminary suggestions for the UK to maximise its own propensity to achieve advantage


1
Use strategic partnerships to shoulder the weight of competition/conflict and to overcome limits on national capabilities.
2
Use partnerships of convenience to adapt to the changing operating environment and to achieve different goals at different times.
3
Use different instruments to favourably shape public opinion at home and abroad.
4
Use different instruments to enhance power projection abroad.
5
Use different instruments to enhance and leverage the potential of science and technology.

Source: RAND Europe analysis.

Additional research could help to refine further our understanding of strategic advantage and how different actors can best achieve their goals in a competitive age

The areas for additional research identified through this project include:

- **The role of perception in strategic advantage:** It may be useful to conduct research or gaming and modelling to examine the role that bluffing (i.e. lying about a capability or advantage) may play in generating or maintaining advantage, and therefore the extent to which the ability to bluff or to influence competitors' perceptions could be considered a source of strategic advantage in itself.
- **The conceptualisation of strategic advantage from the perspective of the UK's competitors:** There would be merit in deepening existing RAND analysis on the UK's main geopolitical competitors and adversaries (Russia, China, Iran and North Korea) – for example through gaming – and in broadening it by exploring strategic advantage through the lens of hostile non-state actors, given the substantial asymmetries between their levers of power and those available to the UK.
- **'Future proofing' strategic advantage:** A useful area of further research may focus on the ways and means of 'future proofing' strategic advantage, with the aim to: (i) ensure that a position of strategic advantage is developed with an understanding of what factors and future trends are likely to affect (and how they are likely to be affected by) the changing dynamics of strategic competition; and (ii) ensure that a position of overall strategic advantage, once gained, can be maintained by remaining aware of, and sensitive to, changes in the above. Useful methodologies could include horizon scanning, futures and foresight methods, scenario development and analysis, red teaming, gaming, assumptions-based planning, and others that aim to maintain awareness, anticipate change, and, in general, make sense of the operating environment.

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Abbreviations

AI	Artificial intelligence
ALN	National Liberation Army
AQI	Al-Qaeda in Iraq
B3W	Build Back Better World
BEIS	Department for Business, Energy and Industrial Strategy
BRI	Belt and Road Initiative
C2	Command and control
C4ISR	Command, control, communications, computers, intelligence, surveillance and reconnaissance
CIA	Central Intelligence Agency
COI	Cluster of Innovation
DARPA	Defense Advanced Research Projects Agency
DCDC	Development, Concepts and Doctrine Centre
DEE	Department of Electrical Engineering
DIME	Diplomatic, informational, military and economic
DoD	US Department of Defence
DST	Defence Science and Technology
Dstl	Defence Science and Technology Laboratory
EADF	Egyptian Air Defence Force
EU	European Union
FCDO	Foreign, Commonwealth and Development Office
FDI	Foreign direct investment
FDR	Franklin D. Roosevelt
FLN	Front de Libération Nationale

FMC	Financial and Military Capability
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GMCIR	General Military Council for Iraqi Revolutionaries
Hamas	Ḥarakat al-Muqāwamah al-ʾIslāmiyyah
HADR	Humanitarian assistance and disaster relief
ICBM	Intercontinental ballistic missile
IAF	Israeli Air Force
IDF	Israeli Defence Forces
IISS	International Institute for Strategic Studies
IOpC	Integrated Operating Concept
IPO	Initial Public Offering
IR	Integrated Review of Security, Defence, Development and Foreign Policy
IRGC	Iranian Revolutionary Guard Corps
IS	Islamic State
ISI	Islamic State of Iraq
ISIS	Islamic State of Iraq and Syria
JCPOA	Joint Comprehensive Plan of Action
KCL	King's College London
LHD	Landing helicopter dock
LPD	Landing platform dock
LRRDPP	Long Range Research and Development Planning Program
MCF	Military-Civil Fusion
METI	Ministry of Economy, Trade and Industry
MIT	Massachusetts Institute of Technology
MOD	Ministry of Defence
MOF	Ministry of Finance
MOFA	Ministry of Foreign Affairs
MOOTW	Military operations other than war
NATO	North Atlantic Treaty Organisation
NDPO	National Defence Program Outline
NSF	National Science Foundation

OA	Operational advantage
ODA	Official Development Assistance
OECD	Organisation for Economic Cooperation and Development
PESTLE-M	Political, economic, social, technological, economic and military
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
PLAN	People's Liberation Army Navy
PM	Prime minister
PSC	Private security company
PSYOPS	Psychological operations
QA	Quality assurance
R&D	Research and development
S&T	Science and technology
SAM	Surface-to-air missile
SBIR	Small Business Innovation Research Programme
SLOC	Sea Lines of Communication
SOE	State-owned enterprise
SONAC	Secretary of State's Office for Net Assessment and Challenge
SRI	Stanford Research Institute
TA	Technology advantage
UAE	United Arab Emirates
UK	United Kingdom
UNPKO	United Nations Peacekeeping Operation
USSR	Union of Soviet Socialist Republics/Soviet Union
VC	Venture capital
WP	Work package

Acknowledgements

The RAND study team is grateful to several individuals for their support in the conduct of this project. Firstly, the team is thankful to the Secretary of State's Office of Net Assessment and Challenge (SONAC) and the Defence Science and Technology Laboratory (Dstl) for commissioning this project and for providing support, insights and feedback throughout.

Secondly, the team is grateful to the RAND researchers (Peter Carlyon, Jennifer Chung, Rebecca Lucas, Fiona Quimbre, Sam Stockwell and Mann Virdee) and external academics (Maeve Ryan, Ahron Bregman, Sir Lawrence Freedman, Alessio Patalano and Patrick Porter) who contributed to the twelve case studies.

Thirdly, the team wishes to thank the various stakeholders involved in the expert workshops conducted throughout this project, especially those from academia (Beatrice Heuser, Cyril Buffet, William Hurst and William Reynolds), RAND US (David Ochmanek, King Mallory, Michael Mazarr and Michael McNerney) and RAND Australia (Marigold Black and Peter Dortmans) and from UK government. This latter group includes representatives of SONAC, Dstl, the Defence Science and Technology (DST) and Finance and Military Capability (FMC) teams within the UK MOD, the Department for Business, Energy and Industrial Strategy (BEIS) and the Foreign, Commonwealth, and Development Office (FCDO).

Finally, the team wishes to thank the RAND Quality Assurance reviewers, Lucia Retter, Bryden Spurling and Ruth Harris, for their invaluable feedback on the draft report and case studies. The team is similarly thankful to Jess Plumridge for her support with visual design and graphics.

While all these individuals have made important and valuable contributions to this project, any errors or omissions remain the sole responsibility of the authors.

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1 Introduction

1.1 Policy context

1.1.1. The world today is characterised by intensifying strategic competition, the dynamics of which need to be understood to inform robust decision-making

Patterns of global competition in the 21st century are often described as more complex, more ambiguous, more unpredictable and more diverse than in the past.[1] Actors face a confluence of interrelated challenges. These cut across different policy areas (diplomacy, defence, economics, etc.), involving competing interests across different regions of the world (including domestic challenges), physical and virtual domains (land, air, maritime, cyber, electromagnetic and space) and time horizons.

These strategic challenges stem not only from natural hazards and systemic risks, such as climate change, but also man-made threats and competition.[2] In some cases, relations between actors are overtly hostile, such as between two nations at war or between a state and a violent extremist organisation seeking to conduct acts of terrorism against its citizens. More often than not, however, relations between actors are not in a binary state of 'friend' or 'foe'.[3] Rather, even intense strategic rivals typically exhibit elements of both cooperation and competition, with the dynamic between them fluctuating depending on the issue in question and whether their interests and values are perceived to align or diverge.[4] In this way, relations between actors may simultaneously exhibit multiple 'states' along the full spectrum from cooperation through competition to conflict.[5] How the parties involved, or any external observers, view the nature of that competition is a matter of interpretation – dependent on factors such as policy priorities, strategic culture and

1 HM Government (2021); US DoD (2021).

2 Raska (2020).

3 DCDC (2021).

4 Mazarr (2022b).

5 Today, for example, the United States and China explicitly recognise each other as prime strategic competitors in many of their policy documents and public statements. The two share a long list of bilateral disputes. These include disagreements over basic values, such as democracy and human rights; tensions over political and territorial claims, such as regarding Taiwan, Tibet and the South and East China Seas; differing ambitions for the future of global governance; and issues around trade, intellectual property theft and cyber espionage. At the same time, the two remain major trading partners and cooperate in areas of mutual interest, such as countering climate change. Cf. Heath (2021).

assessments of other actors' goals and ability to shape strategic outcomes in pursuit of them.[6]

In some cases, actors' goals align and there are opportunities for mutually beneficial, or 'positive-sum', interactions – at least when levels of trust, domestic politics and other factors are conducive to cooperation.[7] Often, however, multiple actors' goals are mutually incompatible (e.g. where both claim the same territory, seek access to a finite resource, or aspire to military supremacy over the other) and they adopt a 'zero sum' approach. Even friendly cooperation with close allies and partners may involve an element of competition. Though all parties to a collaborative effort (e.g. a trade deal, or a joint programme developing military technology) may enjoy a net benefit, at least in absolute terms, the distribution of benefits, costs and risks between parties may be uneven. This means some emerge as 'winners' and some as 'losers' in relative terms.[8]

1.1.2. In this fluid and multidimensional competition, actors pursue strategic advantage in different forms; there is no 'one-size-fits-all' advantage

Ultimately, pursuing strategic advantage should not be about having an edge for its own sake, though the prestige associated with being perceived to lead the world in a particular area, such as military prowess or scientific discovery, may bring its own political benefits, both internationally and with domestic audiences. Rather, the aim should be to better position a given actor to defend its own interests and pursue its chosen objectives in the face of overlapping and potentially conflicting ambitions from its competitors.

In broad terms, strategic advantage can be understood as 'leverage' that can be used by an actor to manipulate bi- or multi-lateral relationships – as well as the international system and the norms, values and behaviours governing it – in its favour. There are diverse sources of potential advantage, and there is likely to be significant asymmetry between one actor's relative strengths and weaknesses, and those of any other competitor. An advantage can be naturally occurring (e.g. derived from fortuitous geography), or can require effort to harness, project, or achieve (e.g. developing a new weapon or other technology).

In trying to establish and maintain advantage at the strategic level, actors have traditionally sought to leverage their strengths, and mitigate their weaknesses, across the diplomatic, informational, military and economic (DIME) levers of power. Contemporary examples include Russia's use of disinformation to try to weaken the European Union (EU) or United States through the polarisation of

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6 Many Western powers, for example, perceived the 1990s as a period of peace, low tension and diminished strategic competition, given the 'unipolar moment' that followed the collapse of the Soviet Union as a rival to the United States. Others in Russia, China and elsewhere, however, believed that great power competition for supremacy had never gone away, even if the United States and its allies were distracted by out-of-area operations in Afghanistan and Iraq. Cf. Kilcullen (2020).

7 The concept of 'zero-sum' and 'positive-sum' games is among the basic building blocks of game theory. In a 'zero-sum' game, rational actors seeking to maximise their own gains must necessarily seek corresponding losses for the other actor(s) involved, as the contested resources are finite. In a 'positive-sum' game, cooperation among multiple actors may enable all parties to benefit, as additional resources can be increased through certain choices. As such, the sum of all the wins and losses across all the actors involved does not equal zero and is instead a positive value.

8 For more on the complex dynamics of simultaneous cooperation and competition within collaborative programmes, such as joint development of new military capabilities (with all its attendant disputes over requirements-setting, cost- and risk-sharing, industrial workshare and intellectual property rights), see Chapter 4 and Annex C in Retter et al. (2022).

their populations,[9] or the manipulation of energy exports for coercive effect.[10] Similarly, analysts have argued that the Belt and Road Initiative (BRI), once matured, could give China a sizeable strategic advantage by allowing it to expand and intensify its economic and political influence.[11] In addition, research and technology, in particular artificial intelligence (AI), are seen as increasingly contested domains,[12] with major economies – including the United States, China and the UK – racing to develop superiority in critical areas.[13]

1.1.3. Though a continuous thread in recent UK strategic thought, strategic advantage is not clearly defined or consistently applied, which can result in the adoption of ineffective strategies

The UK government's 2021 Integrated Review of Security, Defence, Development and Foreign Policy (hereafter 'the IR') recognises the current operating environment as one characterised by systemic competition expanding across multiple spheres – both within the conventional military domains of land, sea and air, and in new ones, such as cyber and electromagnetic or space, as well as in the technology landscape and information environment more broadly. Within these spheres, actors use an increasingly diverse range of levers (such as information operations, proxies or economic statecraft) and often seek to achieve their objectives without overt confrontation or conflict. This includes by trying to modify the rules and norms that govern conduct in the international system, and by embracing the ambiguity and deniability of the so-called 'grey zone' to achieve their objectives without triggering a large-scale armed response.[14]

Based on this threat assessment, the IR is replete with prominent references to the idea of enhancing the UK's 'strategic advantage', or use of related terminology (see Figure 1.1). This is also true of the Command Paper published by the MOD in the same month as the IR. This seeks to flesh out some of the detail as to how Defence will contribute to achieving the UK's overarching strategic objectives as outlined in the IR. Below the level of national policy and strategy, the military's latest concepts and doctrine giving guidance on how the Armed Forces should prepare, train, operate, deter and fight in future are also heavily influenced by this language – including the capstone Integrated Operating Concept (IOpC) (see Figure 1.2).

9 Legucka (2020).

10 Korteweg (2018).

11 Ishnazarov (2020).

12 Dortmans et al. (2022); Quimbre et al. (2022).

13 White House (2021); Chatham House (2021); HM Government (n.d.).

14 HM Government (2021b).

Figure 1.1 The Integrated Review on strategic advantage

Global Britain in a Competitive Age: the Integrated Review of Security, Defence, Development and Foreign Policy (March 2021)

The IR highlights 'sustaining strategic advantage through science and technology' (S&T) as one of four overarching and mutually supportive objectives in the Strategic Framework to 2025.

This framework establishes the UK government's overarching national security and international policy objectives.

According to the IR, incorporating S&T as an integral element of international relations and national security policy, along with fortifying the UK's position as a global S&T and cyber power, will be essential in gaining economic, political and security advantages, and in favourably shaping international rules, norms and behaviours in its favour.

HM Government
Global Britain in a competitive age
The Integrated Review of Security, Defence, Development and Foreign Policy
CP 403

Source: UK government (2021b).

Figure 1.2 The Defence Command Paper and IOpC on strategic advantage

Defence in a Competitive Age (March 2021)

The Defence Command Paper published shortly after the IR picks up the theme of strategic advantage from an MOD perspective. It suggests that the UK achieves advantage through various mechanisms, including:

- Allies and partners, with whom the UK can share the responsibilities of security, and who can provide a force multiplication effect.
- Use of S&T, whereby the UK can seize innovation opportunities and leverage game-changing technologies to underpin the modernisation of its armed forces.
- Persistent overseas engagement, carried out across Defence and in collaboration with other government departments (OGDs), agencies, the police, industry, and allies and partners.

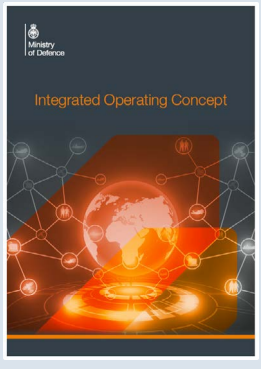
Integrated Operating Concept (updated September 2021)

The IOpC provides the conceptual basis for how the MOD and UK Armed Forces seek to transform the military instrument and its contribution in the context of intensifying strategic competition. In relation to strategic advantage, it emphasises the central idea of being 'integrated for advantage':

- Within the military instrument, this means integration both 'horizontally' across domains and 'vertically' through the levels of warfare – tactical, operational and strategic.
- It also means deeper cooperation and coordination across government, with allies and partners, and with society (incl. industry and academia).

Significant emphasis is also placed on information and decision advantage, to out-think and out-manoeuvre adversaries, and on persistent engagement to build and leverage partnerships around the world.

Together, these ideas seek proactively to shape conditions in the strategic and operating environment in the UK's favour, rather than reacting to crises.



Source: UK MOD (2021); DCDC (2021).

Strategic advantage is, therefore, a foundational concept on which current UK strategy and policy is built, and which is supposed to guide future concept, force and capability development and investment decisions within the MOD and Armed Forces specifically. However, it is also a contested and under-theorised concept that has no common agreed definition across the UK government or, more narrowly, across the security and defence establishment.[15] The same problem is also pointed out in academic literature, according to which the concept of strategic advantage does not have an analytically meaningful or universally agreed definition. Instead, the term is often 'conflated with a desirable political end state (for example, the existence of a [favourable] rules-based order) or specific processes (such as deterrence).'[16] This means that, despite being the core components of strategy, ends, means and ways related to strategic advantage are not accurately delineated. This, in turn, can lead to strategies, policies, plans and behaviours being built on faulty assumptions, failing to establish priorities, being prone to interpretation by different parts of the government, and being unable to measure progress or success and thereby evaluate and refine the implementation of strategic documents such as the IR.

In particular, defining strategic advantage as the successful outcome in a process of strategic competition, as opposed to as a tool with which to navigate this competition, could result in it not being accurately developed or employed. In addition, any change in the geopolitical environment that requires a shift towards leveraging a different type of advantage could be misinterpreted as failure of the previous strategy, rather than prudent adaptation to continuously evolving circumstances as the focus of competition shifts.[17]

1.2. Research scope and objectives

1.2.1. Efforts have been ongoing across the UK government to establish a common understanding of strategic advantage to better inform implementation of strategy and policy

A robust theoretical and empirical understanding of 'strategic advantage' should be based on evidence from the academic literature, supported by case studies and lessons learned from other sectors and nations. Ongoing efforts within Whitehall are meant to enable a more comprehensive understanding of what constitutes strategic advantage, what conditions influence it, and what criteria can be used to measure its possession or use, and its success in influencing competition outcomes. In turn, this is meant to provide a conceptual basis upon which UK strategy and policymakers can identify priorities, as well as provide nuance to how the UK's strategic advantage could be enhanced to better achieve the country's goals.

As a starting point for further research and analysis, a working definition has been developed by SONAC within the MOD, as shown in Figure 1.3.

15 Expert workshop I, 20 January 2022; Expert workshop II, 21 January 2022; Expert workshop III, 27 April 2022.

16 Roberts and Sidharth (2020).

17 Mazarr (2022b); Frank in Frank and Bartels (2022).

Figure 1.3 The current definition of strategic advantage

Strategic advantage

"The relative ability of an actor to achieve their strategic objectives in a given situation, compared to a competitor or competitors."

Source: SONAC.

1.2.2. SONAC, with support from Dstl, commissioned RAND to conduct a multi-phase study of strategic advantage to refine existing definition of 'strategic advantage'

Phase I of the present project, of which this report constitutes the final output, aims to support ongoing UK government efforts to bring clarity to this important topic. It does so primarily by developing a series of case studies exploring the types of advantage held by different actors historically, the ways in which advantage has been gained and/or lost, and the ways in which the actors have sought to maintain and exploit advantage in practice. Based on these insights, the study aims to stress-test and refine the working definition provided by SONAC, and to enhance the overall understanding of this complex issue across government.

In addition, a further Phase II of this project will conduct a high-level analysis of the main assumptions underlying the UK's approach to strategic advantage, as outlined in key policy documents. This will identify explicit and implicit assumptions, analyse the related implications for the development and employment of strategic advantage, and single out areas that may merit more investigation in future research. Given the sensitive nature of these more applied findings, only the Phase I report will be unclassified and published.

1.3. Methodology

This project is based on a multi-method approach, described in more detail in Annex A.

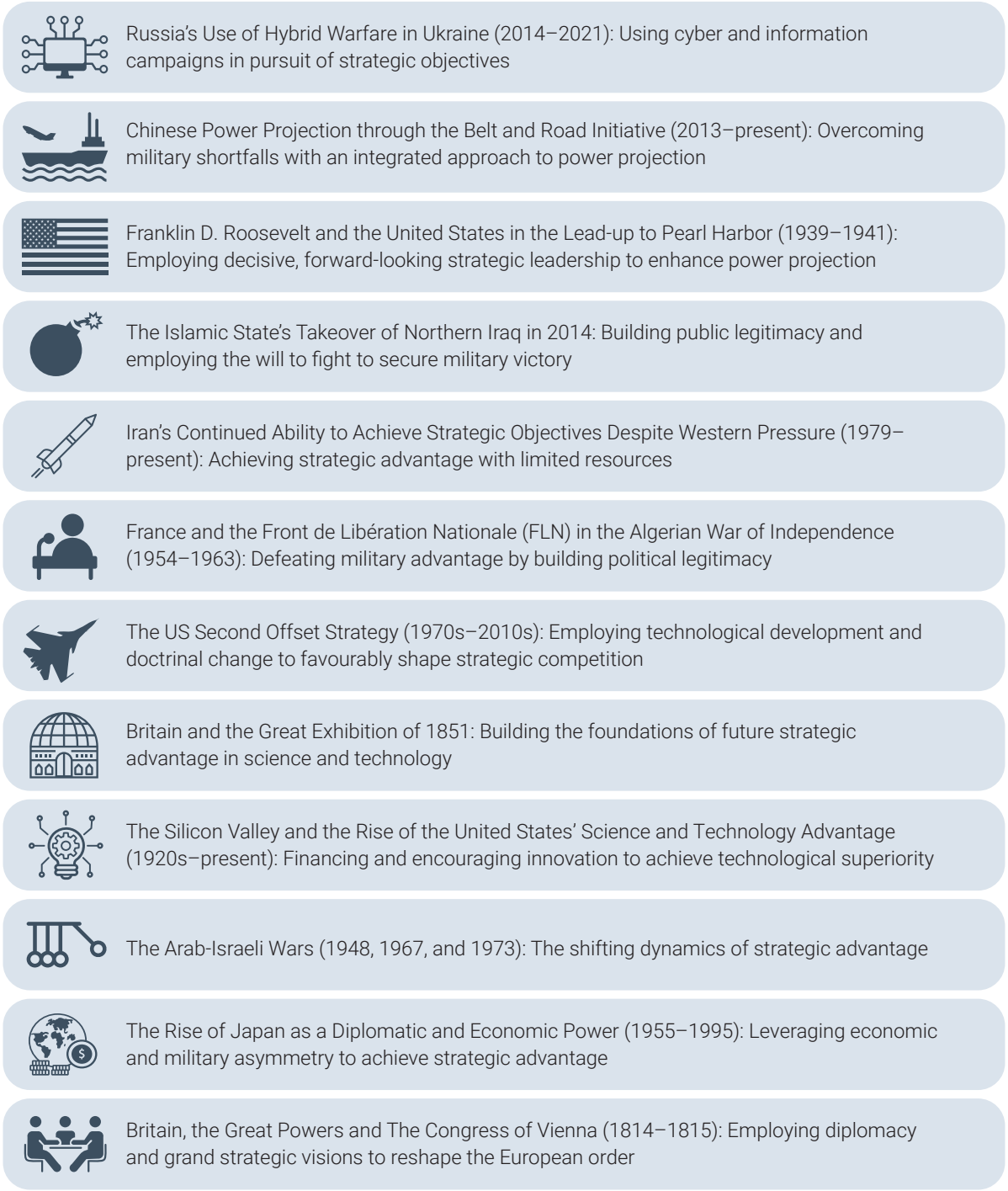
The first step focused on establishing a contextual understanding of the theory and debates surrounding strategic advantage and on developing a framework to guide the selection of case studies. It included a detailed review of 40 academic sources, short-listed from a long list of several hundred papers and books. These were written by a range of authors and discuss different instruments of power (diplomatic, information, military, economic), geographical areas (countries, regions), time periods (with a primary focus on the modern era) and actors (state, non-state). Based on the data extracted from this literature review, the study team developed a case study selection framework and validated it through expert workshops with participants from RAND (including both European and US colleagues) and academia. The main outcome of this work package (WP) was a long list of case studies presented to SONAC and Dstl for approval.

The second step focused on the development of twelve case studies to augment the theory gained through the literature review with empirical data and insights into how strategic advantage works in practice. Out of the twelve, six were developed by RAND and the rest outsourced to external academic experts to ensure a variety of viewpoints. Researchers

represented a wide range of disciplines, nationalities, ages and wider backgrounds, including from beyond defence and security.

Figure 1.4 provides an overview, while Annex D presents the case studies in full.

Figure 1.4 Overview of the case studies developed as part of this project


Russia's Use of Hybrid Warfare in Ukraine (2014–2021): Using cyber and information campaigns in pursuit of strategic objectives
Chinese Power Projection through the Belt and Road Initiative (2013–present): Overcoming military shortfalls with an integrated approach to power projection
Franklin D. Roosevelt and the United States in the Lead-up to Pearl Harbor (1939–1941): Employing decisive, forward-looking strategic leadership to enhance power projection
The Islamic State's Takeover of Northern Iraq in 2014: Building public legitimacy and employing the will to fight to secure military victory
Iran's Continued Ability to Achieve Strategic Objectives Despite Western Pressure (1979–present): Achieving strategic advantage with limited resources
France and the Front de Libération Nationale (FLN) in the Algerian War of Independence (1954–1963): Defeating military advantage by building political legitimacy
The US Second Offset Strategy (1970s–2010s): Employing technological development and doctrinal change to favourably shape strategic competition
Britain and the Great Exhibition of 1851: Building the foundations of future strategic advantage in science and technology
The Silicon Valley and the Rise of the United States' Science and Technology Advantage (1920s–present): Financing and encouraging innovation to achieve technological superiority
The Arab-Israeli Wars (1948, 1967, and 1973): The shifting dynamics of strategic advantage
The Rise of Japan as a Diplomatic and Economic Power (1955–1995): Leveraging economic and military asymmetry to achieve strategic advantage
Britain, the Great Powers and The Congress of Vienna (1814–1815): Employing diplomacy and grand strategic visions to reshape the European order

Source: RAND Europe.

The third and final step focused on synthesising the insights emerging from all the preceding research and analysis, and on identifying their implications for the working definition of strategic advantage developed by SONAC, as well as for the UK's wider understanding of this concept. It included an internal analysis workshop, as well as an expert workshop with participants from RAND (including US-based colleagues), academia and different teams within the MOD and across government. These fed generation of the final Phase I report.

1.4. Caveats and limitations

This report is subject to the following caveats and limitations:

- **The concept of strategic advantage is complex, contested and under-theorised, leaving many areas to be explored in more depth as part of follow-on work.** As outlined in Section 1.1, strategic advantage is a contested term, both in government and academia. This resulted in rich discussions that explored different perspectives on, and dimensions of, strategic advantage and related concepts, such as strategic competition. However, this often raised questions without clear-cut answers. This report consequently points to several areas for further investigation.
- **The selection of the twelve case studies was not intended to provide a comprehensive representation of how strategic advantage manifests.** Although the long list of case studies developed by the study team was informed directly by the literature, expert consultations and analytical framework, the twelve taken forward were chosen by SONAC and Dstl. Topics were chosen to reflect areas of interest for the MOD or fill gaps in knowledge or expertise. As such, they are indicative and not intended as a comprehensive representation of how strategic advantage manifests across all levers of power, types of actors, regions, time-periods or other contextual factors.
- **Each case study inevitably draws on the knowledge and perspective of its author.** All case studies follow a basic structure and explore key themes related to strategic advantage. However, each is ultimately a reflection of its author's own knowledge, understanding and approach to this complex topic.

Given these caveats, the findings presented in this report are not intended to be interpreted as definitive answers, but as an evidence-based contribution to ongoing discussions about strategic advantage.

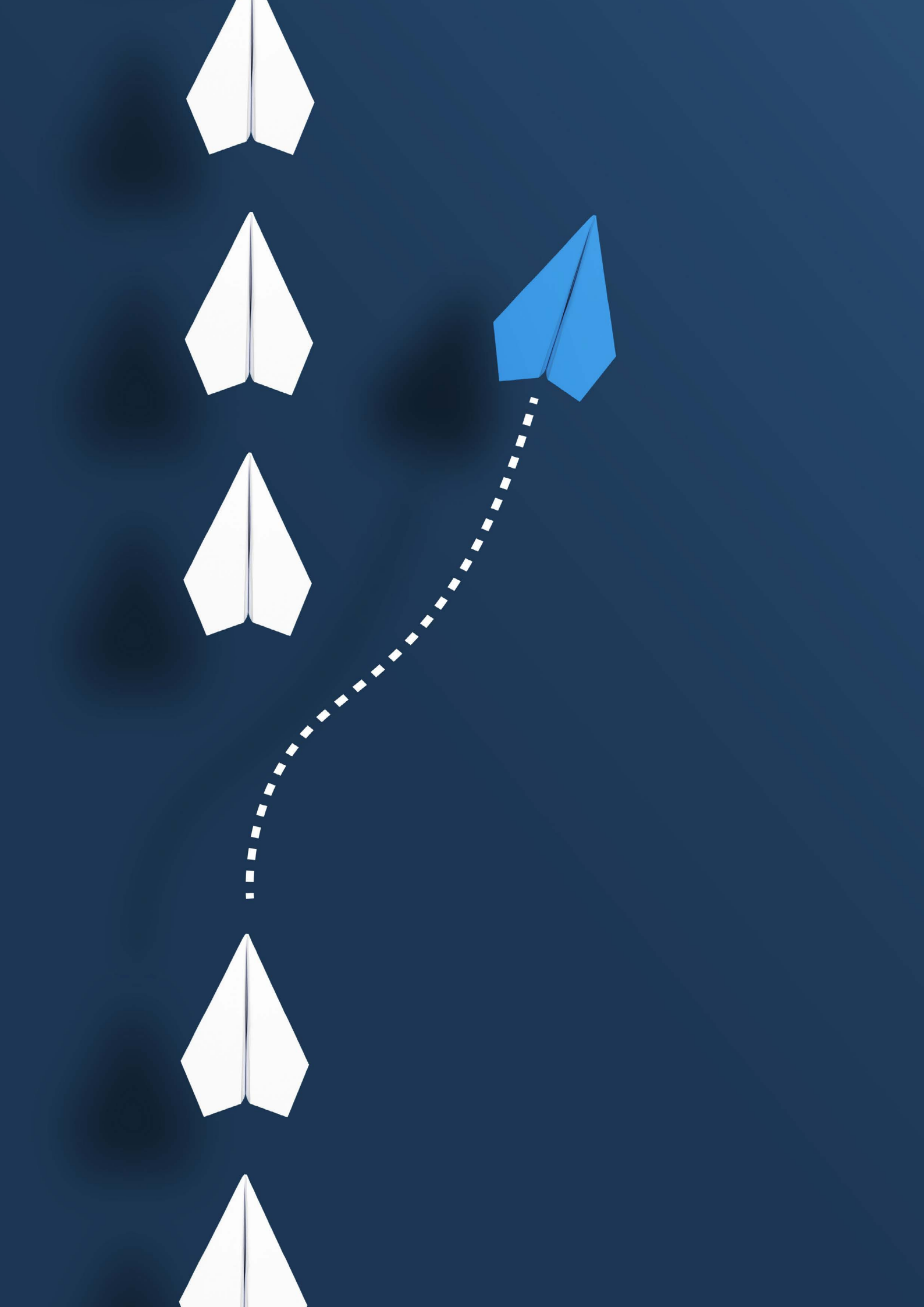
1.5. Report structure

Beyond this introductory chapter, this core report contains five additional chapters:

- **Chapter 2** focuses on placing strategic advantage in context by explaining how it fits with existing concepts such as strategy, competition or advantage at lower levels (e.g. 'operational advantage').
- **Chapter 3** focuses on understanding strategic advantage by providing an analysis of different dimensions, features and components of the term. It also provides a revised definition, in line with the conclusions emerging from the course of the project.
- **Chapter 4** provides a revised definition of strategic advantage, based on the study findings.
- **Chapter 5** examines characteristics associated with successfully achieving advantage in practice.

- **Chapter 6** focuses on conclusions, recommendations and next steps.

The core report is supported by a bibliography and several technical annexes: **Annex A** contains a detailed description of the study methodology. **Annex B** contains lists of those experts and stakeholders who participated in the analysis workshops conducted along the course of this project. **Annex C** contains additional discussion of lessons from the twelve case studies, which are then provided in full in **Annex D**.



2 Conceptualising strategic advantage in theory

As outlined in Chapter 1, the notion of strategic advantage has become a prominent feature of UK policy and strategy documents in recent years. To begin to understand and define this concept properly, however, it is first necessary to clarify how it overlaps with, relates to, and differs from, related concepts within the extensive body of theory that exists around strategy, advantage and strategic competition.

The following sections provide a brief overview of how the concept of strategic advantage fits within this wider context. Chapter 2 thereby aims to bound the definitional discussions that follow in Chapters 3 to 5 and to avoid, or at least minimise, any confusion or incoherence with other ideas, models and terminology often used today across government, the military, businesses and academia.

2.1. Strategy, advantage and strategic advantage

2.1.1. There is no universally agreed definition of strategy itself, complicating matters from the outset when seeking to better understand strategic advantage

The meaning of strategy is itself contested despite centuries of theorising and real-world implementation. While it is outside the scope of this study to revisit that vast body of literature in detail, it is useful to provide a definition and then highlight some prominent themes in recent discourse on the topic. For the purposes of this study, UK Defence Doctrine provides a baseline definition (see Figure 2.1), as well as a description of how the strategic, operational and tactical levels interrelate (see Figure 2.2).

Figure 2.1 Definition of strategy and its relation to policy

Policy "articulates a choice leading to a course of action proposed or adopted by a government... [and] is a statement of intent, or a commitment to act."

Strategy is "creating and orchestrating the instruments of power in support of long-term policy objectives."

Together, **policy** and **strategy** "describe what we need to achieve (the ends), how we will do this (the ways) and the resources we need (the means)."

Source: JDP 0-01, Fifth Edition.

Figure 2.2 Definition of the strategic, operational and tactical levels

The **strategic level** is "the level at which national resources are allocated to achieve the government's policy goals (set against a backdrop of both national and international imperatives). Achieving these goals usually requires a combination of military force, diplomacy and economic measures, as well as collaboration with other nations' governments and armed forces and other international organisations and agencies. Strategic success requires foresight, patience, endurance, tenacity and the ability to adapt to changing circumstances."

The **operational level** is "the level at which operations are planned, conducted and sustained, to contribute to achieving national strategic aims, as well as synchronising action, within theatres or areas of operation." It provides "the bridge between the strategic and tactical levels."

The **tactical level** is "the level at which formations, units and individuals ultimately confront an opponent or situation within the joint operations area... This is the level at which engagements are fought in direct contact with an opponent."

Source: JDP 0-01, Fifth Edition.

The strategic level is sometimes broken down further, differentiating between the more narrowly focused 'military strategy' and the cross-governmental 'national strategy' or 'grand strategy'. 'At the top of the definitional hierarchy… "grand strategy" identifies and articulates a given political actor's security objectives at a particular point in time and describes how they will be achieved using a combination of instruments of power – including military, diplomatic and economic instruments.'[18]

The interrelation between these nested levels of contestation is especially relevant when considering the dynamics of strategic competition. As explored in Chapter 3, the idea of strategic advantage raises obvious questions as to what makes an advantage 'strategic', as opposed to merely operational or tactical. Before those can be addressed, however, we must first understand what is meant by 'advantage'.

2.1.2. Many of the guiding principles of strategic theory may provide useful lessons when thinking about how to define, gain and use strategic advantage

Distinctions are often drawn between 'strategy in the milieu' (from the French, meaning a person's surrounding culture or social environment), which is open-ended and sets out a vision and high-level objectives based on an actor's interests and values, and 'positional strategy', which is context-specific and guides how an actor responds to a particular issue, region or challenge. Differentiating between

18 Davis Biddle (2015, 5).

an open-ended strategy and one that is more narrowly focused will prove useful when moving to explore the dynamics of strategic advantage in detail in Chapters 3 to 5, helping differentiate between an overall position of strategic advantage, and context-specific advantages in a given dimension.

Other useful insights can be gleaned from the literature around strategy making and implementation. Recent debates on these topics have tackled themes such as[19]:

- **Strategy is inherently relational**, involving a contest between opposing wills. As such, any concept of strategic advantage is not just rooted in competition; it is also a human pursuit, subject to all the fog, friction and risks of misperception or miscalculation that strategy practitioners routinely encounter. Strategy remains, fundamentally, as much art as science.
- **Strategy is complex and increasingly so.** Traditional distinctions between 'home' and 'away', between 'war' and 'peace' or between 'virtual' and 'physical', are collapsing as the world and its various political, economic, social, technological, legal, environmental and military systems (PESTLE-M) multiply and become more interconnected. This interconnectivity has added complexity to the already daunting challenge of navigating choices amidst an uncertain future, finite resources, and a mix of known and unknown threats. This necessitates a systems-thinking approach, conscious that any strategic decision (or cultivation of advantage) in one area might have second- or third-order effects elsewhere in the international system that are not easy to predict.
- **Strategy is about managing risk and uncertainty**, given the trends discussed above. As it can take a long time to implement aspects of a given strategy (such as to develop a position of advantage in a new area), significant effort must go into foresight and horizon scanning, as well as hedging and mitigating actions to deal with unanticipated outcomes or sudden 'strategic shocks'. Strategists must also navigate trade-offs in terms of the temporal dimension of strategy, most notably the temptation to achieve near-term advantage only to find oneself in a disadvantaged position in the long term.[20]
- **Strategy must be adaptive and resilient.** Optimising a strategy (or the cultivation of advantage) for one specific scenario or actor risks disaster should other threats emerge. Equally, finite resources mean it is rarely, if ever, possible to invest in as broad a range of levers of power as one might like. As such, strategy theorists are increasingly moving beyond the traditional, narrow focus on correlating 'ends, ways and means' to think more about how to promote flexibility, adaptability and responsiveness, as key components of more resilient strategies.
- **Strategy is about communication.** The literature places increasing emphasis on strategic narratives and communication to different audiences at all stages. This is not just about consultations during strategy development. During implementation, it is also about signalling to competitors as part of deterrence, to allies and partners as part of reassurance, and to civilian populations

19 For examples, see the evolving debates across: Heuser (2010); Layton (2012); Freedman (2013); Rumelt (2017); Gaddis (2019); Milevski (2019); Black (2020); Ellery and Saunders (2021); Lambert (2021); Slevsnik (2021).

20 Gray (2015).

Figure 2.3 Definition of advantage

> **Advantage** is overall net "superiority of position or condition", or an individual "factor or circumstance of benefit to its possessor".

Source: Merriam-Webster Dictionary (n.d.).

as part of the pursuit of advantage in a contested information environment.

- **Strategy implementation places increasing emphasis on integration** of multiple levers of power and coordination and orchestration across multiple departments, agencies and allies or partners. This is a theme that will recur throughout Section 2.2 and Chapters 3 to 5.

This understanding of the latest academic theory and debates around strategy provides a basis for exploring the concept of strategic advantage in practice. The next section turns to the meaning of 'advantage'.

2.1.3. Strategic advantage should be understood alongside, but not conflated with, other types of advantage in common usage

On the face of it, the notion of advantage is more straightforward to define than strategy. The term is widely used across government, business and academia, being generically applicable to a wide range of situations.

Beyond this dictionary definition, however, there are various possible types and manifestations of advantage. Before diving into the nuances of strategic advantage specifically, it is important to differentiate between some of the more commonly encountered concepts. Literature uses a mix of interrelated and overlapping terms, which can cause confusion:

- **Analogues to 'advantage':** Examples include 'edge', 'upper hand', 'supremacy' and 'dominance'. Often, these are used interchangeably with 'advantage'; in other cases, they may be used to denote the extent to which an advantage is narrow ('edge') or emphatic ('dominance').

An important distinction emerges between advantage in and advantage through[21]:

- **Advantage in:** This refers to the ability of an actor to achieve an edge in a particular area. It implies that having an advantage in the given area is an end in and of itself.
- **Advantage through:** This refers to the ability of a given actor to leverage their edge in a particular area to benefit their position more widely. This implies that having an advantage in the given area is more a means to an end, contributing to wider objectives.

There are also specific examples emerging from economic theory:

- **Absolute advantage:** This refers to the ability of a given actor (e.g. a nation or firm) to produce more or better outputs than another actor.
- **Comparative advantage:** This refers to the ability of a given actor (e.g. a nation or firm) to produce outputs at a lower opportunity cost, not necessarily at a greater volume or quality. Unlike absolute advantage, this

21 HM Government (2021b).

concept speaks to the need for an actor to specialise where it can most efficiently deliver value, rather than using an outsized share of its resources competing in less beneficial areas.

Of special relevance when thinking about strategic competition and interstate relations are:

- **Asymmetry:** This refers to the differences between one actor and another (e.g. in terms of their respective strengths and weaknesses across different dimensions, domains or geographical regions).
- **Competitive advantage:** By one definition, this refers to 'the ability to wage a campaign in the period between major conflicts ("wars") to shape the rules that govern violent competition in favour of one's own inherent asymmetries; that is, the domain-specific advantages that each competitor enjoys due to factors such as geography, internal domestic conditions and its relative advantages with regard to particular components of material power.'[22] Linking back to the idea of comparative advantage, an alternative definition of competitive advantage might then be 'the ability to shape the rules of a competition so as to be able to leverage one's own areas of comparative advantage.'[23]

Revisiting the question of what makes an advantage 'strategic', it is possible to contrast strategic advantage with similar terms at lower levels. UK defence strategy, policy and concepts make frequent reference to:

- **Operational advantage (OA):** Ostensibly, this refers strictly to advantage at the operational level, as opposed to strategic or tactical advantage. In practice, however, the term has typically been interpreted more broadly by the UK MOD, denoting 'the ability to find and maintain an edge over potential adversaries, both to increase the chances of our success in hostile situations and to increase the protection of the UK assets involved, especially our people.'[24] In short, OA denotes a focus on having access to battle-winning capability, often assumed in the UK context to derive from a qualitative edge (e.g. superior technology or training) rather than numerical superiority over adversary forces. This term is also often used in close relation to the concept of freedom of action (FOA), meaning 'the ability to determine our internal and external affairs and act in the country's interests free from intervention by other states or entities, in accordance with our legal obligations.'[25] Together, OA and FOA emphasise the need to have both the capability to deliver a given effect, as well as the agency and will to do so.
- **Technology advantage (TA):** Generically, this refers to access to superior technology, as measured in terms of relevant performance metrics for equipment (e.g. range, speed, lethality, stealth) and impact (e.g. on military operations). The concept was a key part of a 2012 White Paper entitled *National Security Through Technology*, which defined technology advantage in terms of possessing both OA and FOA. More recently, the 2021 IR emphasises 'strategic advantage through science and technology' as one of the four

22 Roberts and Kaushal (2020, 3).

23 Roberts and Kaushal (2020, 12).

24 UK MOD (2012, 26).

25 UK MOD (2012, 26).

pillars of its Strategic Framework,[26] while the 2021 Defence and Security Industrial Strategy replaced the concepts of OA and FOA with 'strategic imperatives' and 'operational independence'.[27]

It stands to reason that strategic advantage should be differentiated from the above concepts by its focus on the achievement of strategic and policy objectives. It therefore also ranges beyond the military instrument to bring in other levers (DIME). Yet, broadening the scope to include the non-military instruments of power brings its own set of complex questions: What are the different dimensions of strategic advantage? Is the term all-encompassing, or can it be bounded? Do individual advantages and disadvantages relative to another actor somehow sum up to at an overall position? If so, how does that process of summation work, both vertically (i.e. aggregating from the tactical to strategic levels) and horizontally (i.e. aggregating across all national levers of power)? How to bring sense to this aggregation, in the absence of any common currency by which to compare the asymmetric costs and benefits of, say, a diplomatic advantage and an economic one?

These questions and other issues faced when defining 'strategic' and 'advantage', let alone the concept of 'strategic advantage', are explored in detail in Chapters 3 to 5. Before moving to that discussion, however, it is useful to ground the concept of strategic advantage in terms of competition, as competition is the rationale that drives the pursuit of advantageous positions and conditions in the first place.

2.2. Strategic competition

2.2.1. Strategic advantage should be understood through the lens of renewed great power competition to better reflect the present-day dynamics of the international system

Constructing a theory of strategic advantage and gathering meaningful insights from empirical case studies, such as those in Annex D, is only possible if rooted in an appreciation of strategic competition. It is only by understanding the nature of competition, including its purpose, scope and complex dynamics, that any subsequent discussion of advantage, and what makes an advantage 'strategic', can make sense.

Over the last decade, competition has slowly re-emerged as the primary concern of Western strategy- and policymakers. This trend has been given impetus by Russia's illegal annexation of Crimea in 2014 and chemical weapons attacks in the UK and Syria; by growing awareness of the systemic challenges posed by a rising China; by the shocks of Brexit, Trump and COVID-19; and, most recently, by the outbreak of a full-blown war in Ukraine in February 2022. This re-focusing on interstate competition, and associated tasks such as territorial defence, marks a shift away from the emphasis on non-state actors, counter-terrorism and counter-insurgency in the 1990s and 2000s – a period that now seems, in retrospect, a brief post-Cold War interlude from historical patterns of conflict, competition and realpolitik among nation-states.[28]

Today, competition is the dominant paradigm in official documents across the Euro-Atlantic community and much of the associated

26 HM Government (2021b).

27 HM Government (2021a).

28 McCoy (2018); O'Rourke (2022).

Figure 2.4 Definition of competition

Competition is "the attempt to gain advantage, often relative to others believed to pose a challenge or threat, through the self-interested pursuit of contested goods such as power, security, wealth, influence and status."

Source: Mazarr, Blake et al. (2018).

academic, think tank and industry discourse. The term is 'often paired with modifiers such as strategic or great power' and appears throughout the UK's Integrated Review, Defence Command Paper and IOpC.[29] The thesis of intensifying competition also underpins the US National Defense Strategy[30]; equivalent documents for Australia,[31] Canada,[32] Finland,[33] France,[34] New Zealand[35] and Norway,[36] and the ongoing efforts to update national security strategies in Germany[37] and Japan.[38] It is also central to the EU's Strategic Compass[39] and the North Atlantic Treaty Organisation's (NATO) new 2022 Strategic Concept.[40] It is also prominent in the strategic thinking and public statements of Russia, China, Iran and North Korea, the main revisionist actors within the current international order,[41] and competitors in the eyes of the UK.[42]

Problematically, however, 'the idea of competition remains ill-defined in the minds of [many] national security practitioners and scholars.'[43] Even within the US Department of Defense (DoD), there are 'dozens of different definitions and ways of understanding the concept.'[44] Figure 2.4 outlines the definition employed for the purpose of this study, derived from a previous RAND study.

This understanding of competition at the international level emphasises three basic ingredients: first, the existence of 'some

29 Mazarr (2022b); HM Government (2021b); UK MOD (2021); DCDC (2021).

30 US DoD (2022).

31 Australian government (2020).

32 Canadian government (2017).

33 Finnish government (2022).

34 French Foreign Ministry (2021).

35 New Zealand MOD (2018).

36 Norwegian MOD (2020).

37 German Federal Foreign Office (2022).

38 Shin (2022).

39 EEAS (2022).

40 NATO adopted a new Strategic Concept at the 2022 Madrid Summit for the first time in twelve years. The 2010 Strategic Concept spoke of a peaceful Europe marked by low tension and few interstate threats. Source: NATO (2022).

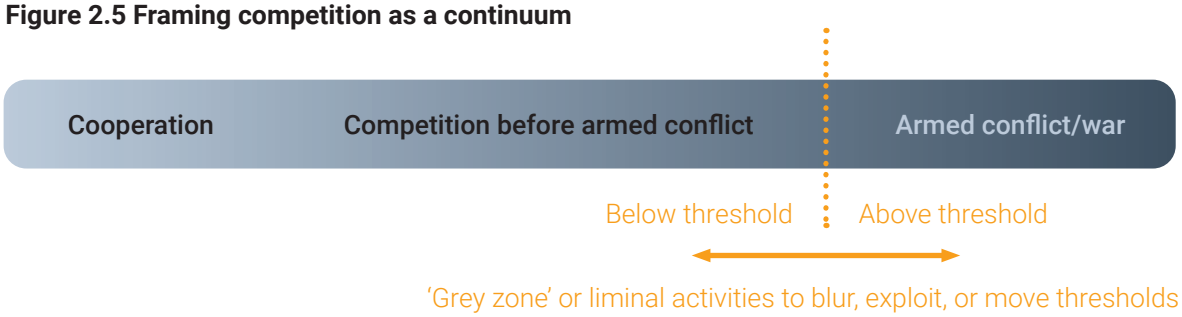
41 Mazarr, Blank et al. (2022); Black et al. (2022).

42 HM Government (2021b).

43 Mazarr (2022b, 2).

44 Recently, the US DoD has issued guidance downplaying use of the term 'great power competition' in favour of 'strategic competition', even as other DoD officials have stated that the latter phrase should only be used to refer to the contest with China, as the greatest challenge to US strategic interests. This contrasts with the use of the term by many US allies and partners, who do not focus it solely on the biggest threat. Cf. Mazarr (2022b, 2).

Figure 2.5 Framing competition as a continuum



Source: RAND Europe, adapted from US Joint Chiefs of Staff (2019).

measurable or perceived contention' (in other words, the participants have to see themselves as competing); second, an effort by the contestants to 'enhance their power or position in relation to one another'; and third, 'the thing the contestants are struggling over must be in limited supply or significant for some other reason'.[45]

2.2.2. Competition should be understood in terms of its place on the continuum of possible hostile or friendly relations between two or more actors

Importantly, the term competition describes a condition, not a strategy or policy. Recognising a state of strategic competition between two or more actors, as many recent official documents have done, does not provide insight into how best to achieve advantage, nor what objectives to pursue with that advantage.[46] Before an actor can determine its own answers to those questions, it must first be clear on the nature of the competition in which it is engaged. Competition is not a binary state: on or off. Instead, it forms part of a wider spectrum of possible interactions with another actor. The UK, United States, Australia and others have all framed international relations as falling along a 'continuum', ranging from friendly cooperation through competition to armed conflict and war (with nuclear war as its logical extreme), as shown in Figure 2.5.[47]

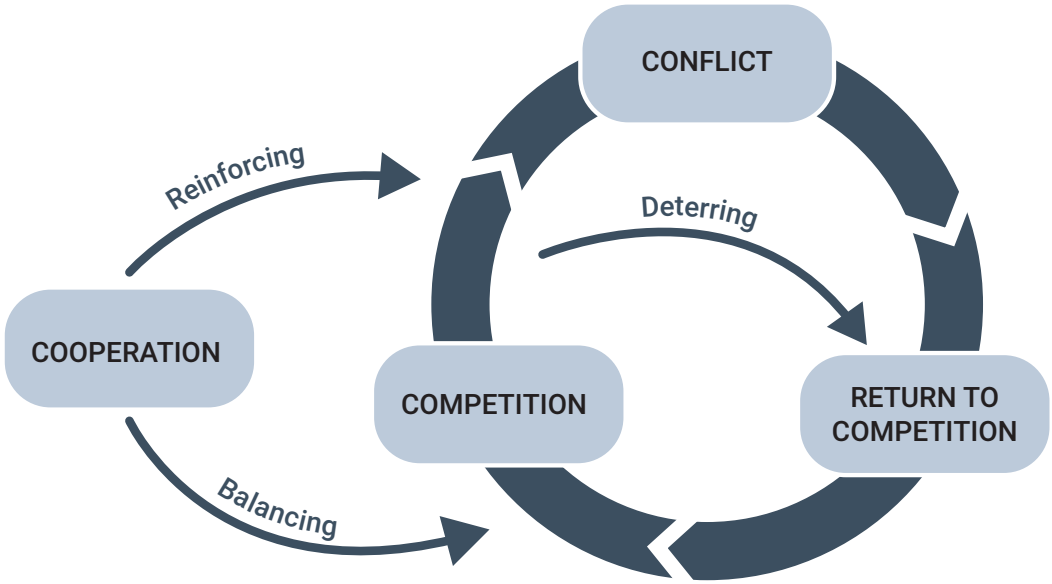
In practice, relations between two actors are rarely, if ever, poised at a single point on this continuum. Instead, actors may find themselves cooperating on certain issues, competing on others, and on the brink of war elsewhere. Also, moving between these different states is not a linear progression up or down the continuum; rather, there are multiple off-ramps and feedback loops, depending on actions taken and signals given to the other actor (ranging from coercion to persuasion and inducements), as shown in Figure 2.6.

45 Mazarr (2022b, 3).

46 Wyne (2019).

47 US Joint Chiefs of Staff (2019); Australian government (2020); DCDC (2021); O'Neill (2022).

Figure 2.6 Example of feedback loop between cooperation-competition-conflict



Source: RAND Europe, adapted from McCoy (2018).

Recognising the presence of these feedback loops, rather than a simple linear progression from friendship to hostility, has implications for how any concept of strategic advantage plays into strategic competition. Seeing the competition continuum in these terms presents actors with a range of choices about how to engage with others. These options are not mutually exclusive, but rather can be mixed and matched. Indeed, they may all occur simultaneously across different dimensions of the strategic relationship:

- **Advantage-seeking through cooperation:** Efforts to de-escalate and transition from zero-sum conflict or competition towards positive-sum relations where interests align.
- **Advantage-seeking short of war:** Use of 'grey zone', 'sub-threshold' or 'liminal' tactics that use ambiguity and deniability to blur, exploit or move thresholds that would trigger an armed response.
- **Advantage-seeking on the escalation ladder:** Efforts to deter, restrain or control escalation towards armed conflict, to avoid accidentally initiating a war on disadvantageous terms.
- **Advantage-seeking in the event of war:** Preparations such that, should war break out, it can be prosecuted from a position of maximum advantage to increase likelihood of favourable outcomes.

2.2.3. Where possible, actors will seek to reframe competition to give greater weight to areas where they are strong, and de-emphasise areas where they are weak

In recent years, UK and US strategy, policy and doctrine have given prominence to terminology derived from this conceptualisation of strategic competition. Selected examples include:

- **'Integration'**[48]: This includes related concepts such as 'integrated approach', 'integrated deterrence', 'multi-domain integration' and 'integrated by design'. Woven through each is an emphasis on breaking down traditional stovepipes (e.g. between domains, armed services and government departments, or with allies, partners, industry and academia) to make more efficient, coordinated use of multiple levers to ultimately out-think, out-manoeuvre and out-compete other actors.
- **'Continuous campaigning'**[49]: This emphasises a shift away from a clear distinction between periods of 'peace' and 'war', towards a mindset that sees all activity as contributing to competition, whether by protecting the homeland, engaging allies, deterring adversaries or preparing to fight.
- **'Persistent engagement'**[50]: This emphasises the importance of a forward-deployed global posture and continuous engagement with allies and partners, enhancing understanding of trends in the strategic environment, building partner capacity, providing reassurance and preventing conflict.
- **'Building enduring advantages'**[51]: This emphasises the importance of transforming the joint force to deliver the people, equipment, technology and other lines of development needed to field, in a more agile and cost-efficient manner, capabilities that will provide an advantage over competitors.

A common theme is a desire to be more proactive in shaping the conditions for, and rules of, competition to suit the relative strengths and weaknesses of the West as compared to countries such as China or Russia. This proactive stance is contrasted, unfavourably, with the risks of a more reactive approach that responds to crises when they occur, primarily by falling back on the use of force. Such an approach fails to prevent conflicts from occurring in the first place and cedes the strategic initiative.[52]

There is, however, ongoing debate over the extent to which actors really possess agency over the issues about which they compete and the terms governing that competition. As noted in a previous RAND study, '[t]he character of the international system of any era – whether more or less rules-based, more or less institutionalised, more or less zero sum – sets the context for competition.'[53] Though even superpowers face limits to their freedom to re-write the norms, behaviours and rules that govern the international system, states or groups of like-minded states can work to shape the system in their favour. At the same time, the historical record suggests that the international system may be altered by factors outside even the most powerful states' control, such as a sudden technological breakthrough, a pandemic or natural disaster, or the discovery of some valuable but hotly contested resource that upsets the previous balance of power.

48 DCDC (2021); US DoD (2022).

49 For more information, see the Integrated Operating Framework in the IOpC. Cf. DCDC (2021, 13).

50 DCDC (2021).

51 US DoD (2022).

52 Ellery and Saunders (2021).

53 Mazarr (2022b, 5).

Figure 2.7 Factors that intensify or moderate strategic competition

Factor	*Assessment*	
Intensifying factors		
Polarity		Emergence of "polycentric" structure; many stabilising elements with bipolarity at top
Power transition	√	Underway between China and the United States; elements of classic risk model clearly in evidence
Uncertainty	√	Significant and rising; hostile competitive actions among U.S., China, Russia, lack of leadership relationships and decline of trust and transparency
Moderating factors		
Interdependence	−	Globally at high levels but trade integration ebbing; view of constraint remains; significant degrees financial, supply chain interdependence remain
Institutions	−	Most functional; regional organisations growing; popular support recovering
Consultative mechanisms		Weakening in U.S.-China, Russia contexts, though many remain in place
Democracy	−	Slight illiberal advance but ratio remains strong
Nuclear deterrence	−	Restraining effect; desire to compete below the threshold
Multilateral problem-solving		Highly imperfect but remains instinct of many major powers
Context-dependent factors		
State identity	√	Self-conception of aggressive, "greedy," nationalistic major powers may intensify competition
Role of domestic interests		Constraining in some cases (EU), possibly exacerbating in others (China)
Leader goals and character	√	Aggressive leader beliefs/goals, notably in Russia, China, Iran; more limited nationalistic ambitions in places such as Turkey and India
Type of military forces	−	Nuclear deterrence remains a predominantly stabilising factor; regional military balances not heavily in offense-dominant category; future concern of societal attack technologies could be destabilising

√ Evidence of notable negative trends

− Positive or stable trends

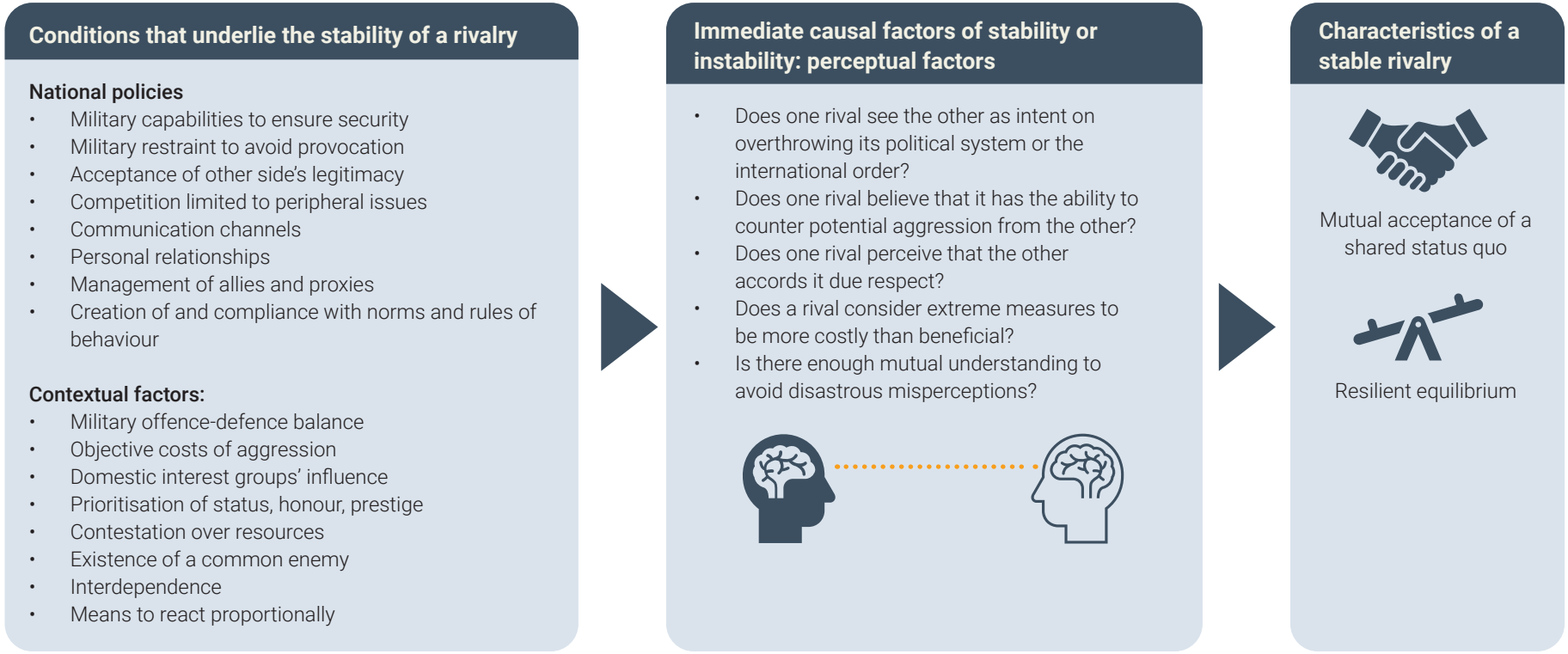
Source: Mazarr, Blake et al. (2018, 32).

2.2.4. In addition to modifying the rules of the international system, actors may also seek to heighten or dampen the intensity of competition to their advantage

Previous RAND research has identified examples of variables that can influence the intensity of a strategic competition, either intensifying or moderating the competitive dynamics. These are shown in Figure 2.7.

Controlling the escalation ladder as suggested in Figure 2.7 may be advantageous, for example if exercising restraint will prevent an unwanted war or stop a revisionist power, disgruntled by what it sees as an increasingly unfavourable international system, from feeling they have nothing to lose from tearing up the rules entirely. If the revisionist actor has few resources or levers of power to call upon,

Figure 2.8 Sources of stability and instability in strategic rivalries


Conditions that underlie the stability of a rivalry
National policies
Military capabilities to ensure security
Military restraint to avoid provocation
Acceptance of other side's legitimacy
Competition limited to peripheral issues
Communication channels
Personal relationships
Management of allies and proxies
Creation of and compliance with norms and rules of behaviour
Contextual factors:
Military offence-defence balance
Objective costs of aggression
Domestic interest groups' influence
Prioritisation of status, honour, prestige
Contestation over resources
Existence of a common enemy
Interdependence
Means to react proportionally
Immediate causal factors of stability or instability: perceptual factors
Does one rival see the other as intent on overthrowing its political system or the international order?
Does one rival believe that it has the ability to counter potential aggression from the other?
Does one rival perceive that the other accords it due respect?
Does a rival consider extreme measures to be more costly than beneficial?
Is there enough mutual understanding to avoid disastrous misperceptions?
Characteristics of a stable rivalry
Mutual acceptance of a shared status quo
Resilient equilibrium

Source: Mazarr, Charap et al. (2022, xi).

this may not matter. But if it is a major power with global influence, then stabilising any strategic rivalry may be important not only to the two actors involved (e.g. the United States and Soviet Union in the Cold War, or the United States and China today) but also to third parties (i.e. other states with a stake in preventing war or disruption of trade).[54]

The extent to which a given strategic rivalry persists in a stable equilibrium for an extended time, as opposed to destabilising and collapsing into some other form (e.g. violence, or competition on different terms), depends on a mix of policy, contextual and perceptual factors, as outlined in Figure 2.8.

54 Mazarr, Charap et al. (2022).

2.3. Implications for this study

This chapter has summarised the fluid, contested and often muddled definitional context in which the concept of strategic advantage is sited. There is a lack of clear, universally agreed definitions for even basic terms such as 'strategy' and 'advantage', let alone for their application in the sense of strategic advantage.

Intensifying strategic competition provides the ultimate rationale for the UK MOD's interest in better understanding the notion of strategic advantage via this study. It also offers a lens through which to identify relevant insights into the scope, meaning and implications of that concept, building on the working definition provided by SONAC in Chapter 1. This contextual understanding of strategic competition was fed into the expert workshops and selection of historical case studies, as summarised in Chapter 3 below.

3 Understanding strategic advantage through history

Having placed the idea of strategic advantage in the context of persistent global competition, this chapter will focus on presenting an analysis of the main themes, implications and conclusions emerging from the case studies and the expert workshops held throughout the course of this study. It summarises key findings from the twelve case studies conducted by RAND and academic researchers, which are provided in full in Annex D. In doing so, it aims to draw out further insights from the empirical data and real-world historical examples, adding nuance to the more theoretical discussions presented in Chapter 2. The purpose of this exercise is ultimately to refine the working definition of strategic advantage offered by SONAC at the outset.

As the analysis in this chapter is based in the concrete examples provided by the case studies, the table below presents an overview of the main implications and lessons identified from the twelve historical cases. It should be reiterated that these represent only a fraction of the possible historical examples that could have been examined; the findings are, as such, not intended as a comprehensive analysis of the changing dynamics of strategic advantage throughout all of history. There are several other important caveats to bear in mind:

- **The historical data is partial, in both senses of the word** (being both incomplete and, inevitably, shaped by subjective historiography and the fact that 'history is written by the victors').
- **The link between cause and effect can be hard to establish with rigour,** not least given the lack of a counterfactual (an alternative 'what if?' to measure against) and the multivariate nature of history.
- **The context of each historical case is unique** – while analysis can tell us what worked, and why, at a given point in

Figure 3.1 Initial working definition of strategic advantage

Strategic advantage

"The relative ability of an actor to achieve their strategic objectives in a given situation, compared to a competitor or competitors."

Source: SONAC.

the past, that does not mean a similar approach would necessarily work in future.

- **The characteristics of the international system are continuously changing** – factors deemed advantageous in, say, the early-modern period, may be less influential in the twenty first century.

Nonetheless, analysis of historical examples is important to ensure that any definition and theory of strategic advantage, however tentative, is grounded not only in theory (as summarised in Chapter 2) but also in the messy realities of the real world.

Table 3.1 Summary of key findings from historical case studies

Russia's Use of Hybrid Warfare in Ukraine (2014–2021): Using cyber and information campaigns in pursuit of strategic objectives:

- The concept of strategic advantage should reflect the enduring relevance and role of 'traditional' levers of influence and power, such as military force, even in a digital age.
- The importance of perceived effectiveness of cyber and information operations may differ from actor to actor, which can bring difficulties when it comes to identifying whether an actor holds strategic advantage in this area.
- Strategic advantage is time-dependent: initial success often reaches a culminating point, past which the balance tips in favour of the adversary.
- The difficulty of discerning other actors' strategic objectives and intent presents a challenge when it comes to assessing whether strategic advantage has translated success.
- It is not always immediately apparent 'who benefits' from a supposed advantage, and what objectives are being pursued when there are multiple competing agendas at play.

Chinese Power Projection via the Belt and Road Initiative (2013–present): Overcoming military shortfalls via integrated approach to power projection:

- Nonmaterial factors, such as beliefs and perceptions, can define strategic advantage.
- Strategic advantage is dynamic and context-dependent.
- Achieving one or multiple types of advantage does not necessarily translate into strategic advantage, but adopting a holistic approach can enable an actor to strengthen its overall strategic advantage even if individual components of it remain inferior to its competitor.
- Actors' definitions of strategic advantage must reflect competitors' own evolving thinking on this topic.
- Actors can draw from a wide array of strategies to achieve strategic advantage, including competition, directed ambition, and cooperation.

Franklin D. Roosevelt and the United States in the Lead-up to Pearl Harbor (1939–1941): Employing decisive, forward-looking strategic leadership to enhance power projection:

- Pursuing strategic advantage may require:
  - » Planning beyond the immediate short term.
  - » Addressing public opinion.
  - » Ensuring the material foundations of military strength, such as supply, logistics, basing and manpower, are in order.
  - » Approaching allies not as permanent friends to be accommodated, but through the lens of power politics and the pursuit of relative gains.

The Islamic State's Takeover of Northern Iraq in 2014: Building public legitimacy and employing the will to fight to secure military victory:

- Societal problems and deficiencies in the will to fight cannot be offset by military capabilities.
- External funding, equipment and training offered in support of foreign militaries cannot guarantee military effectiveness and success, unless accompanied by reforms in governance and rule of law.
- In a counterinsurgency context, winning 'hearts and minds' remains the most important strategic advantage.
- Will to fight remains an essential dynamic of strategic advantage, stemming from many sources, including the perception of strategic advantage itself.

Iran's Continued Ability to Achieve Strategic Objectives Despite Western Pressure (1979–present): Achieving strategic advantage with limited resources:

- Strategic advantage does not always materialise in conventional terms; the UK therefore needs to understand how adversaries see themselves, what means are available to them, and what goals they pursue.
- Connections with a variety of stakeholders offer diverse means for pursuing advantage; the UK therefore needs to expand its partnerships and networks with a variety of non-state actors across civil society, the private sector and other communities who may share a similar agenda.
- Defining clear priorities can enable an actor to better direct resources and leverage relationships to achieve specific ends.

France and the Front de Libération Nationale (FLN) in the Algerian War of Independence (1954–1963): Defeating military advantage by building political legitimacy:

- Strategic advantage is not a substitute for effective strategic manoeuvring: effectively implementing strategic advantage requires both understanding and navigating different aspects of the strategic context.
- Networks of allies and supporters are crucial in leveraging political advantage.
- Strategic ends should not be confused with strategic ways and means; effectively using strategic advantage is dependent on it being closely aligned with a strategic objective.
- Different levers of strategic advantage are often inseparable from one another.

The US Second Offset Strategy (1970s–2010s): Employing technological development and doctrinal change to favourably shape strategic competition:

- Strategic advantage is multifaceted; different components must interact to provide transformative benefits.
- In pursuing strategic advantage, it is essential to ensure that strategic competition takes place on conditions that are favourable to the actor.
- In pursuing strategic advantage, it is essential to adopt a whole-of-government approach and foster cross-governmental alignment over strategic goals.
- Future-thinking and flexibility should be embedded within the conceptual understanding of strategic advantage.

Britain and the Great Exhibition of 1851: Building the foundations of future strategic advantage in science and technology:

- Pursuing strategic advantage in science and technology (S&T) may require:
  - » Exploiting soft-power initiatives, such as 'expos' and public-private sector engagement models, to enable the people 'of art, science, and commerce' to engage collaboratively with their counterparts and wider networks of international stakeholders.
  - » The development of public consent and support for foreign policy.
  - » Strategic, long-term investment in the skills and capabilities of rising generations.

The Arab-Israeli Wars (1948, 1967 and 1973): The shifting dynamics of strategic advantage:

- Strategic advantage is dynamic and time-dependent; it changes with both time and context.
- Will to fight is inherently bound with the existential threat the country considers itself under, and is a most important strategic advantage.
- Strategic advantage may not always arise in relation to the specific strategic objectives originally in mind.

Silicon Valley and the Rise of the United States' Science and Technology Advantage (1920s–present): Financing and encouraging innovation for technological superiority:

- Government can help build and maintain strategic advantage in S&T through basic investment in research and development (R&D), through patent laws and immigration laws, as well as by providing a market to facilitate commercialisation and uptake of technology.
- Universities can help foster strategic advantage in S&T by incorporating emerging fields of knowledge into courses and adapting to changing knowledge demands
- Auxiliary services are crucial to help start-ups achieve maturity.

The Rise of Japan as a Diplomatic and Economic Power (1955–1995): Leveraging economic and military asymmetry to achieve strategic advantage:

- Strategic advantage benefits from a 'holistic' approach, where areas with the tools of statecraft that constitute the 'advantage' are coordinated with, and supported by, tools in other areas of statecraft.
- Strategic advantage is enhanced by an asymmetric approach, whereby an actor accepts constrains in one area of statecraft in order to retain the edge gained in another.
- Strategic advantage needs continuous monitoring so that adjustments can be introduced to retain it.
- Strategic narratives are needed to maximise strategic advantage, as well as to reduce risks and competition.
- Strategic advantage needs alliances and partnerships to balance national limits.
- Strategic advantage demands an engagement with potential fears unfolding from neighbouring actors.

Britain, the Great Powers and the Congress of Vienna (1814–1815): Employing diplomacy and grand strategic visions to reshape the European order:

- The effective pursuit of strategic advantage starts with clarity on grand strategy, and with people who can situate short-term decisions within a conceptual architecture built around a clear conception of the national interest.
- Creating a truly grand strategic culture within UK government will require some profound changes in the transaction of government business and the structures of decision-making, which may include:
  - » Ensuring that senior decision-makers (and those who will succeed them) have protected time and opportunities to read deeply, and to think about and discuss the 'big picture' and the underlying forces that shape and reshape global order.
  - » Overcoming the 21st-century governmental aversion to 'talking shops'.
  - » Improving the abilities of strategists to provide recommendations that are practical, and reflective of the workings of modern government and of the various imperatives and realities that decision-makers face, including those related to the rapid pace of the modern information environment.

Source: RAND Europe analysis. See Annex D for full detail on case studies and supporting evidence.

3.1. Characteristics and constituent parts of strategic advantage

The following sections discuss a range of cross-cutting themes that emerge from these twelve historical cases and the expert workshops conducted for this study. These are summarised below in Figure 3.2.

3.1.1. Strategic advantage is hard to measure in retrospect, let alone to predict

The first recurring theme is that strategic outcomes are often ambiguous and contested, with what happened, why, how and with whom as the ultimate 'winners and losers', being hard to establish in many cases. The complex, disorderly and contingent nature of history makes it impossible to reduce any definition or theory of strategic advantage to a set of elegant formulae (based on quantifiable factors that could be measured, analysed and modelled computationally) or universal principles (that could be applied in any context, domain, region or time-period).[55] This means that understanding, identifying and predicting the best pathways for a given actor to strategic advantage, and thereby towards favourable strategic outcomes, remain as much an art as a science, at least within the current limits of analytical methods and technology (though AI

Figure 3.2 Case studies and expert consultations: key characteristics of strategic advantage

Recurring themes from historical analysis
Strategic advantage is complex and multivariate
Strategic advantage is about perception as much as reality
Strategic advantage is probabilistic and often emergent
Strategic advantage is about managing surprise and adaptation
Strategic advantage is dynamic and often short-lived
Strategic advantage is hard to measure or predict
Strategic advantage is about allies and third parties, not just competitors

Source: RAND Europe analysis.

55 Landes (1998); Mazarr (2022a).

and advances in computing and data science may, in future, yield new insights).[56]

Nonetheless, there are general lessons that can be derived from historical cases, which shine a light on flaws or over-simplification within the body of theory summarised in Chapter 2. These insights can therefore contribute to a more nuanced and grounded understanding of strategic advantage – one open about the fact that there is so much about competition dynamics that, for all government, the military and academia's best efforts, remains poorly understood and all too often based on shaky data and untested hypotheses.[57]

3.1.2. Strategic advantage is complex and multivariate

The second of the key themes emerging from both the case studies and the expert workshops is the need to distinguish between a position of overall strategic advantage and the constituent 'strands' of advantage that are then interwoven to support this position:

- **A position of overall strategic advantage** can be described in broad terms as one in which an actor is most likely to succeed in achieving its strategic objectives. This position reflects the total sum and balance of advantages and disadvantages that the actor in question holds, relative to a competitor, in a given situation.[58]
- **The constituent 'strands' that support this position** of overall strategic advantage can, by contrast, be described as the different levers that the actor in question can utilise to manoeuvre in the context of strategic competition, as well as underlying conditions that influence outcomes but fall outside of their direct control (e.g. favourable geography, or external changes in the international system).[59]

This important distinction has direct implications for defining strategic advantage. It emphasises the need for a multivariate understanding of advantage; in none of the historical case studies presented above was there a single 'game-changer'.[60] Instead, outcomes were shaped by multiple conditions or variables that, when aligned, contributed to what has been called 'holistic packages of competitive advantage'.[61]

This finding is consistent with a recent RAND study employing a different set of historical cases to look at trends in rivalries among great powers: 'Small asymmetries in power or capabilities rarely make a decisive difference in a competition. Real advantage derives from combined effects – the ways in which multiple characteristics interact with each other to

56 De Spiegeleire et al. (2017); Davis and Bracken (2022).

57 Beckley (2018); Wyne (2019).

58 Expert workshop III, 27 April 2022.

59 Expert workshop II, 21 January 2022; Expert workshop III, 27 April 2022.

60 For example, Britain's industrial and technological advantages over its competitors in the mid-nineteenth century, as demonstrated at the Great Exhibition, or the emergence of Silicon Valley in the 20th century, were not the product of disruptive scientific breakthroughs per se, but rather of a whole series of social, economic and political developments that resulted in vibrant ecosystems open to creativity and innovation and which were able to translate new ideas into commercial, military and soft power outputs efficiently. Japan's rise in the post-war period was similarly the product of a combination prudent domestic policies, economic and technological modernisation, and careful navigation of external relationships with the United States, China and other major powers.

61 Lacey (2016, 61), cit. in Mazarr (2022a).

produce dynamism.'[62] It also emphasises that some variables can be controlled, or at least influenced – for instance, via policy decisions on what technology to invest in, or how to posture a military force along a contested border – while others are out of the hands of even the most powerful, centralised state apparatus and simply must either be adapted around or tolerated. These points will feature prominently in further discussions in Chapters 4 and 5.

3.1.3. Strategic advantage is probabilistic and often emergent

The third recurring theme from the case studies builds on the complex nature of strategic advantage by emphasising the role of chance. While having a position of overall strategic advantage means that, in a given situation, the actor in question is more likely than its competitor to achieve its objectives, history shows that success is rarely, if ever, guaranteed. Rather, the outcome of any given competition will be determined by the individual advantages and disadvantages that an actor holds and the manner in which these interact asymmetrically with those of its competitor.[63] Though complicated enough, this bidirectional interaction is further impacted by a large number of external forces (such as the actions or inactions of third parties, or the effects of macro-level trends in the international system or physical, virtual and technology landscapes). It is also influenced by sources of randomness and unpredictability, such as chance, human emotion or error, social group dynamics, good or bad weather, or the malfunction of a critical piece of a technology. In all the historical case studies, then, there were advantages and disadvantages on all sides, and outcomes may have been made more or less likely by certain realities and choices – but they were not predetermined.[64]

Any outcomes are the result of multiple, sometimes unpredictable, interactions between different factors and actors along with an element of chance. While a position of overall strategic advantage is meant to tilt the balance of probabilities in favour of a given actor, it is these interactions that ultimately determine the extent to which the actor is successful in achieving its strategic objectives.[65] Decisions and actions undertaken during competition can also have second- and third-order effects across interdependent PESTLE-M systems (both domestic and international). These may or may not have been intended or anticipated ahead of time, and may not even be well understood after the fact. This can result in cascading consequences and emergent behaviours within the overall international system, as well as necessitating continuous change and improvisation from those actors competing for advantage within it. It is important therefore not to focus narrowly on trying to determine who has a position of overall strategic advantage, as this risks excluding a more nuanced appreciation of the interlinkages between different 'strands' of advantage or disadvantage, and of the

62 Mazarr (2022a, 305).

63 Internal analysis workshop II, 1 April 2022; Expert workshop III, 27 April 2022.

64 Counterfactuals abound. What if FDR had died before the US entered the World War II? Certainly, the underlying advantages that the US enjoyed in terms of its favourable geography, access to natural resources, and world-leading industrial capacity, would have remained. But whether and how these would have been brought to bear against the Axis powers would have been different. Similarly, the long-term outcomes for the US could have been radically different if the British had sought peace with Hitler in 1940, if the Soviet Union had collapsed in the summer of 1941, or if the Manhattan Project had not delivered the Allied powers victory in the race for the atomic bomb.

65 Expert workshop I, 20 January 2022; Expert workshop III, 27 April 2022.

interactions between different actors and interdependent systems.[66]

3.1.4. Strategic advantage is dynamic and often short-lived

The fourth recurring theme builds on this idea of competition being complex, unpredictable and fluid, by emphasising the variable, but often fleeting, half-life of strategic advantage. The case studies underscore that such advantage is not a permanent position, characteristic, or asset; it is also not an asset that can be employed at different times and in different contexts with the expectation that it will have the same effect. Instead, strategic advantage is a dynamic state and in constant flux, both time- and context-dependent.[67]

Consultations with experts suggest that, in general, the value of a given 'strand' of strategic advantage decays or diminishes over time. This is due to changes in the strategic and operating environment, generated by adversaries acting to counterbalance the (perceived) advantage. This can happen through the development of new technologies (e.g. the United States developed precision-guided weapons to offset the Soviet Union's numerical advantage in Europe in the Cold War) or through the formation or collapse of alliances with others (e.g. the United States entering World War II helped to decisively alter the balance of power, while the loss of international support for France left it politically isolated against the FLN).[68]

In addition to being time-dependent, the value of different 'strands' of strategic advantage is also dependent on context. The same characteristic or resource that may provide an advantage in one situation relative to one actor or group of actors may be irrelevant in a different context, or even a disadvantage.[69] This is also true of 'strands' of advantage that can be considered more 'static' and less-time dependent, such as an actor's geographic setting. For example, Russia's vast territorial spread, combined with the concentration of its population, governance structures and military capabilities in the western part of the country, would act as an advantage in a conflict with European actors, providing both proximity of military assets and territorial depth. By contrast, in a conflict with East Asian actors, such as China, these characteristics would translate to difficult logistics, time-consuming re-deployments, and long lines of communication and supply.[70]

3.1.5. Strategic advantage is about managing surprise and adaptation

The fifth recurring theme is a corollary of the complexity and unpredictability of interstate competition and the short-lived nature of many sources of strategic advantage. To maintain a position of overall advantage in a game where the rules and cards are changing – and perhaps not clearly understood in the first place – an actor needs to anticipate potential future changes in the strategic and operating environment in the long term, as well as to

66 Expert workshop I, 20 January 2022; Expert workshop III, 27 April 2022.

67 Expert workshop I, 20 January 2022; Expert workshop II, 21 January 2022; Expert workshop III, 27 April 2022.

68 Expert workshop I, 20 January 2022.

69 Expert workshop I, 20 January 2022; Expert workshop II, 21 January 2022.

70 Expert workshop I, 20 January 2022.

be flexible and adaptable when managing or engaging in competition in the short term.[71]

In the long term, the historical cases and expert workshops both pointed to a need for leaders to have an open-minded and forward-thinking perspective on how threats, competitors, competition, conflict, and the strategic and operating environment overall, may change in time, and on how these changes may affect their competitive position. The recognition that strategic advantage is not a permanent state or asset, and that the capabilities needed to maintain an overall position of relative superiority may change with the prevailing conditions, is essential to a successful conceptualisation of strategic advantage (see Annex D.2, D.7).[72] By contrast, disregarding the effect of potential future changes can lead to losing strategic advantage.[73]

In the short term, when engaged in competition or conflict, it is essential that actors monitor what is often a fluid and dynamic situation with a view to adapting to and exploiting both the longer-term trends and the near-term – perhaps momentary – windows of opportunity that might emerge (see Annex D.10, D.11).[74] In this sense, conceptualising strategic advantage demands a sense of opportunism, as well as a point of connection with concepts of readiness, adaptation and effective strategic manoeuvring.[75] A position of overall strategic advantage can be maintained by adopting a flexible stance with regard to the component 'strands' of advantage, adding to and dropping them as and when needed.[76]

3.1.6. Strategic advantage is about perception as much as reality

The sixth recurring theme is the importance of human cognition, and its flaws, amidst all this complexity. It is important to view the concept of strategic advantage not only from a realist perspective, but also through a constructivist lens, which recognises the role of perception in influencing an actor's behaviour. As noted during expert consultations, the existence of war is itself evidence of information gaps and the differing calculations and perceptions of goals, capabilities and vulnerabilities on either side of a conflict.[77] Insurgencies similarly demonstrate the power of the perception that even seemingly overwhelming military and economic advantages enjoyed by an opponent can be overcome.[78]

Immaterial, non-quantifiable factors such as the decision-making processes, belief or value systems, available information, strategic objectives or will of competitors, allies and

71 Expert workshop III, 27 April 2022.

72 Expert workshop III, 27 April 2022.

73 This was exemplified in one of the case studies, which described how, following the Second Offset, the United States ignored and, as such, was unable to adapt, in time, to geopolitical factors that were eroding the advantage it had gained in terms of precision guided munitions, such as Chinese investment in new battlefield technologies and the rise of insurgencies and counterinsurgent operations (see Annex D.7).

74 Internal analysis workshop II, 01 April 2022; Expert workshop II, 21 January 2022.

75 Internal analysis workshop II, 01 April 2022; Expert workshop III, 27 April 2022.

76 This was exemplified by one of the case studies, whereby Israel was able to establish a position of strategic advantage vis-à-vis its adversaries in the 1967 War, by drawing on an advantage that had not been intentionally developed with this particular competitor or situation in mind: using intelligence about the Egyptian Air Force, previously gained with the purpose of preventing an air attack on Israel's nuclear reactor in the Negev desert, Israel was able to neutralise the Egyptian aerial threat (see Annex D.10).

77 Debs and Monteiro (2014).

78 Expert workshop I, 20 January 2022.

third parties, all influence the generation and maintenance of strategic advantage.[79] Furthermore, as mentioned in the previous section, a consideration of future scenarios involving potential threats and competitors is necessary to safeguard and maintain a position of strategic advantage. In a 2002 interview, then US Secretary of Defense Donald Rumsfeld famously remarked on the Johari window technique[80]:

> 'There are known knowns; there are things we know we know. We also know there are known unknowns; that is to say, we know there are some things we do not know. But there are also unknown unknowns – the ones we don't know we don't know.'[81]

This famous conceptualisation of international relations draws attention to the equal importance of potential (present and future) but unknown material factors – such as an opponent's covert military capabilities – and immaterial factors, such as their will to fight.[82] Given strategic advantage is dynamic and context-dependent, it must therefore be responsive to the evolving thinking of multiple actors within the international system. At least as regards great and middle powers, actors must also take into consideration how others perceive them, and how others are likely to assume that they are in turn being perceived (and so on).[83] Self-perception is as influential as perceptions of other actors' own beliefs, capabilities and actions, particularly in the case of will to fight, which is inherently bound within perceptions of 'the threat' and the identity and value system of those doing the fighting.[84] Crucially, perceptions of both the self and the other are typically based on incomplete information – despite best efforts at intelligence-gathering – and more or less flawed assumptions and cultural differences,

79 Expert workshop II, 21 January 2022.

80 Luft & Ingham (1961). Created by psychologists Joseph Luft and Harrington Ingham, the Johari window is a technique designed to help people deepen their understanding of their relationship with themselves and with others. It is made up of four quadrants designed to contain information that is: (i) known to self and others; (ii) not known to self but known to others; (iii) known to self but not known to others; and (iv) not known to self and not known to others.

81 CNN (2016).

82 The case of IS's success in Northern Iraq in the summer of 2014 is an example of immaterial factors outweighing material advantage; despite Iraqi forces having superiority in numbers and equipment, they were inhibited by a morale-sapping perception that IS held the strategic advantage (see Annex D.4). The case of Russia's use of hybrid warfare in Ukraine up to 2021, and subsequent invasion, alternatively demonstrates perhaps an overestimation of Russia's level of strategic advantage. In this case, the perceived utility of cyber and information operations did not translate to strategic success. They may even have been dangerously counterproductive, helping induce Russian over-confidence ahead of the failed attempt at a swift 'coup de grace' in February 2022, underestimating Ukrainian resistance (see Annex D.1).

83 This relates not only to game theory, but also to prospect theory, a branch of behavioural economics focused on the notion that decision-making under risk is based on choosing between options based on biased judgements about the likelihood and impact of potential losses and gains. Specifically, the theory posits that, rather than acting like rational agents, actors typically try to avoid losses more than they exploit equivalent gains. This suggests actors are loss-averse and assess their position relative to some reference point (e.g, others) rather than in absolute terms. For an application of both game theory and prospect theory to strategic competition, deterrence and signalling, see Triezenberg (2017).

84 For example, a collapse in popular, governmental or military will to fight was decisive in France's counter-insurgency against the FLN in Algeria, Iraq's confrontation with IS in 2014, as well as many other historical cases (e.g. the French and US defeats in Vietnam) not addressed in this study but covered in past RAND research. Cf. Connable et al (2018); McNerney et al. (2018); and Connable (2022).

risking miscalculation, miscommunication and unintended escalation or defeat.[85]

Successfully building, employing and assessing advantage also requires a consideration of how other actors understand the concept of strategic advantage and the present character of international competition. This raises questions such as how, and at what risk, other actors' perceptions of competition can be manipulated, for instance to overlook some of their own relative strengths or overstate their vulnerabilities.[86] During expert consultations it was agreed that outright bluffing of strategic advantage (e.g. lying about a capability or advantage that did not really exist) would put a state at great risk should that bluff be called.[87] However, over-emphasising certain advantages might enhance or maintain strategic advantage.[88] Furthermore, building and articulating certain narratives can influence others' perceptions to an actor's advantage.[89] The ability to effectively frame and communicate strategic advantage to allies and competitors in ways that enable an actor to pursue its objectives is essential and may be a source of strategic advantage in itself.[90]

3.1.7. Strategic advantage is about allies and third parties, not just competitors

The final recurring theme is that strategic advantage can exist within, and through, all relationships among actors. As discussed in Chapter 2, strategic advantage is inherently relational, as it must be conceived in comparison to another actor. However, strategic advantage does not only relate to known and overt competitors or adversaries; it can also be conceptualised in relation to allies, notional or potential future competitors and, in some cases, as a self-serving exercise:

- **Strategic advantage can be pursued in relation to allies:** Strategic advantage can be pursued and built in the context of friendly competition with partners and allies.[91] Even in more friendly contexts, an understanding of strategic advantage can be useful for managing enduring relationships and understanding the dynamics of competition. For example, when assessing how to trade with partners, considering how to maintain a relative economic advantage remains an important aspect of national interest, even if trade

85 For example, this was demonstrated by the Arab-Israeli case study. During the 1948 War, Israeli troops perceived the conflict as a life-or-death struggle that motivated them to fight, whilst a common Arab perception was that Israelis were bad soldiers. A resulting strong force mobilisation by the Israelis and an underestimation of their capabilities on the part of the Arabs provided Israel with the advantage (see Annex D.10).

86 For a recent RAND analysis of different national perspectives on the nature and contemporary character and ends of international competition – including those of Russia, China and Iran – see Mazarr, Blank et al. (2022).

87 Expert workshop III, 27 April 2022.

88 One cited example of this related to the way in which Britain continues to leverage its historical Empire relationships to enhance its prestige in the current global order. Expert workshop III, 27 April 2022.

89 For example, in the case of Japan's growth as a diplomatic and economic power during the Cold War, the state deliberately developed and communicated narratives that emphasised dependence on imported primary resources and framed this as a substantial vulnerability; this helped to contain pressure from the United States, which would have otherwise expected Japan to carry out a more assertive regional role, and enabled Japan to present itself as a country that understood other developing nations, thus shifting foreign perceptions from negative to positive (see Annex D.11).

90 Expert workshop III, 27 April 2022.

91 A good example in this sense relates to FDR's actions to project power during and post-World War II, where, while the United States worked closely with Britain and viewed it as a key European ally, it still worked to ensure it had economic leverage over Britain in order to protect plans for a new American-led international order (see Annex D.3).

may ultimately be beneficial to both sides in absolute terms.[92]

- **Strategic advantage can be gained through allies and through cooperation:** As discussed in Chapter 2, cooperation forms part of the wider continuum of relations by which states can achieve their objectives, and can therefore, alongside competition and even warfighting, be an instrument for building and maintaining strategic advantage.[93] Similarly, military alliances and multilateral security fora are useful platforms to build strategic advantage, particularly in the case of small and medium powers. Some smaller European states' strategic advantage stems in large part from NATO and EU memberships, for example, and the influence, access, markets and security guarantees that these provide (e.g. enabling a small nation to 'import' strands of advantage from more powerful allies and partners, such as by being a net security consumer).[94]
- **Pragmatically engaging with a wide variety of partners (including non-state actors) at different times can help navigate a changing strategic environment to one's advantage:** While relationships built on trust, shared history and common values may be most sustainable in the long term, changes in the prevailing conditions may necessitate rapid development and exploitation of ties to newer partners and proxies, potentially on a transactional basis.[95] This demands that any concept of strategic advantage considers both 'hard' (coercion, inducement) and 'soft' (persuasion, attraction) power dynamics within a relationship or network of different relationships.[96]
- **Strategic advantage can be developed without a specific competitor in mind, but with a view to enhance one's overall position:** The pursuit of strategic advantage can, at times, also be self-serving; it can be developed without a particular competitor in mind, but with the aim of achieving a specific strategic objective.[97] Certain policies and actions that enhance factors such a nation's economic resources, political cohesion or capacity for science and innovation, may

92 Expert workshop III, 27 April 2022.

93 China's power projection through the BRI is indicative of this nuance; actively working to invest overseas and expand trade and economic cooperation has strengthened China's strategic advantage across multiple domains (see Annex D.2). The FLN case study demonstrates how the ability to effectively leverage a network of allies as a platform for support, as the FLN did during the Algerian war of independence, can prove a decisive advantage even if only gaining temporary and partial access to another actor's own relative strengths and weaknesses (see Annex D.6). Further, Japan effectively utilised a relationship with the United States as a key part of its foreign policy during the Cold War years to absorb potential tensions and maintain their strategic advantage (see Annex D.11).

94 Similarly, being a principal ally of the United States contributes to Britain's advantage. Expert workshop III, 27 April 2022.

95 In the case of Iran's continued ability to achieve its strategic objectives despite Western pressure, engagement with an extensive network of non-state actors allowed Iran to shape strategic outcomes while avoiding the costs of direct confrontation with adversaries (see Annex D.5). The Silicon Valley case study also demonstrates how domestic actors such as universities and private sector organisations can contribute to building strategic advantage (see Annex D.9).

96 Nye (1990); Nye (2011).

97 For example, in expanding its power projection capabilities, China did not intend only and primarily to erode US advantage, but also to develop a world-class military. The fact that this had the effect of constraining US strategic advantage in the Asia-Pacific manifested as an additional beneficial consequence (see Annex D.2). Similarly, Japan's efforts to consolidate its economic position during the Cold War stemmed from a need to recover from a state of economic insecurity, as opposed to competition with a specific adversary (see Annex D.11).

be generically applicable to a wide range of potential future crises or competitions, while other choices may need to be more tailored to specific threats and competitors – an important point to which discussion will return.

Building on these themes from the historical case studies, the following chapters offer a revised definition of strategic advantage (Chapter 4) and unpack how to think about its characteristics and consistent parts in the context of intensifying international competition in the twenty-first century (Chapters 5 to 6).

4 Defining strategic advantage

Having placed strategic advantage in the context of academic theory in Chapter 2, selected historical cases in Chapter 3 and discussed the nature and character of advantage as a key feature of ever-evolving international competition, this chapter turns to refining the working definition of this concept.

4.1. Refining the concept and definition of strategic advantage

4.1.1. The insights gathered through this study offer new clarity on the contested term of strategic advantage and help inform proposals for its refinement

Based on the findings of this report, the initial working definition of strategic advantage (contained in Figure 4.1) provided at the outset of this study has merit, but appears imprecise in the following key ways:

- It does not differentiate between a position of overall strategic advantage and the individual strands of advantage that comprise it.
- It does not reflect the context- and time-dependent nature of individual strands of advantage and does not consider the dynamic nature of competition and of the strategic environment in general.
- It does not reflect that a position of strategic advantage can be pursued not only in relation to adversaries, but also to allies and partners, who can be viewed as friendly competitors. (Conversely, an actor should cooperate with their adversaries where beneficial, even as they compete elsewhere.)

As a result, this study proposes a revised definition that strives to accommodate, and reflect more accurately and clearly, the main characteristics of strategic advantage. However, it should be noted that expert consultations revealed that strategic advantage may hold different meanings to different people, and emphasised that there are certain risks associated with imposing a precise common definition.[98] In particular, taking such a complex and multifaceted concept and reducing it to one or two sentences, with no additional context, risks producing an impractical and easily misinterpreted definition, thus defeating the overall purpose of achieving analytical rigour and commonality of understanding.[99]

98 Expert workshop II, 21 January 2022.

99 In this sense, one key finding emerging from this study is that reaching a cross-government agreement on what strategic advantage means, how it can be defined, and how it should be employed, should start with a broad agreement on the existence of a state of competition, on the characteristics of that competition, and on the national strategic objectives to pursue within that competition. This requires some guiding principles, e.g. clarity on national interests and values, and a vision of the nation's desired role within the international system (such as that which the 2021 IR aims to provide the UK). In practice, as will be discussed in the following chapters, forging this agreement on the 'ends' of strategy can be very difficult to achieve across government, let alone across society or a multinational alliance.

To this end, Figure 4.1 provides a short, revised definition as well as a brief outline of how the pursuit of strategic advantage is manifest in the behaviour of actors engaged in competition.

Figure 4.1 The current and proposed definitions of strategic advantage

Original definition

"The relative ability of an actor to achieve their strategic objectives in a given situation, compared to a competitor or competitors."

Revised definition

"A position of strategic advantage is one in which an actor is more likely than others (whether hostile or friendly) to achieve their objectives in a given contest, crisis or conflict, having influenced the dynamics of competition in their favour and maximised the relevance of their own areas of asymmetric advantage across all levers of power."

Elaboration

It is the net result of continuous and non-linear efforts by all parties to:

1. **Learn a complex game with ever-changing rules:** Identifying the prevailing conditions within the international system that shape the dynamics of competition.
2. **Rig the odds in their favour:** Based on this understanding of competition dynamics, both:
   - A. **Fix the rules:** If the dynamics are unfavourable, reshaping them to benefit the actor's areas of relative strength and downplay weaknesses. If the dynamics are already favourable, defending the status quo from revisionism.
   - B. **Play the best possible hand:** If competition dynamics cannot be changed, trying to cultivate new strengths or mitigate existing weaknesses. Developing, orchestrating and employing individual strands of advantage across all levers of power (i.e. making and implementing effective strategy). The aim is to maximise the actor's *propensity* for advantage – meaning the efficiency with which they can turn their national *potential* (e.g. given available resources, geography and other enablers or constraints) into relevant outputs. This determines the outcomes the actor can realistically hope to achieve given the imperfect translation of their theoretical *potential* into their actual *performance* in a real-world contest, crisis or conflict.
3. **Influence the play of others:** Anticipating and influencing the perceptions, decisions and actions of others (e.g. through deterrence, coercion, bluffs, persuasion or co-option), as well as how they interact with third parties in a multipolar system.
4. **Mitigate losses and exploit openings:** Avoiding defeats that would entail an end to competition (e.g. nuclear war), absorbing and recovering from other losses, and seizing windows of opportunity that arise from other actors' mistakes or misfortune.
5. **Repeat:** Revisiting the assumptions and approach based on competition outcomes (as the actor perceives them, whether from general trends or wins/losses of specific crises).

Source: RAND Europe analysis.

It is important to unpack this definition, given such a contested topic. The sections below provide added nuance, based on the findings of Chapters 2 and 3, demonstrating that the concept of strategic advantage only makes sense if grounded in a wider understanding of competition and of the interactions between the myriad actors, systems, and variables – one that defies simple explanation or measurement, but which analysts and policymakers alike could nonetheless do more to navigate effectively.

4.2. Developing a theory and measures of strategic advantage

4.2.1. Strategic advantage should be understood in terms of crafting adaptive strategies to navigate the complex, fluid dynamics of international competition

The revised definition frames the concept as inherently linked to an actor (typically assumed to be a nation, for the purpose of this study, but not necessarily so) and to the pursuit of their strategic objectives. Crucially, however, the choice of wording consciously moves beyond the traditional, linear progression of 'ends, ways, means' that dominated strategy-making guidance and military doctrine in Western countries in past decades. Instead, the definition is based on a foundational understanding of competition as complex, non-linear, global and persistent, without a clear 'end state' or a final resolution in 'victory' or 'defeat'.[100]

Thus, while the definition of strategic advantage is closely linked to an actor's strategic objectives, it does not presume that those objectives, nor the interests, values and assumptions that underpin them, are fixed. It also does not recognise good strategy making as being about a straightforward progression from clearly defined ends, through implementation based on available means and chosen ways, towards success or failure measured against the initial objectives. Such an overly linear approach does not pay sufficient attention to:

- **The recursive nature of strategy,** given the agency of other actors (each with their own competing set of strategic objectives and asymmetric advantages and disadvantages) and the influence of external factors (such as changes in climate or technology that impact the dynamics of international competition), all of which create their own feedback loops for strategists to contend with, and a state of continuous flux in the strategic environment.
- **The central role of uncertainty,** given the many complex, interdependent systems and variables involved, including the unpredictable human element and the impact of fog, friction and chance.
- **The cross-governmental dimension,** given that 'ends' may be disputed or interpreted differently by different government departments or entities at lower levels (e.g. military services).
- **The societal dimension,** given the fact that strategic outcomes will not just be determined by the state apparatus (including intelligence agencies, police and the armed forces), but rather by the ambitions, resources and behaviours of industry, academia and the general populace – a point that is only becoming more salient as the relative influence of the public sector declines in a 21st century defined by the commercialisation and

100 Expert workshop II, 21 January 2022.

democratisation of power, money and technology.

- **The temporal dimension,** given that even if individual crises or conflicts may seem to end, competition endures (assuming no fundamental change in the political organisation and cultural norms of the human species, nor its destruction by nuclear war, disease or other means).

As a result, it is important to recall the academic debates in Chapter 2 – or the messy realities and lessons exposed by the historical cases in Chapter 3 – and conceptualise advantage in terms of adaptive strategy making and implementation in an increasingly uncertain and multipolar world.[101] As detailed in the 2021 IR and elsewhere, this strategic environment is marked by complexity, interconnectivity, rapid change and mounting pressure on governance institutions designed for the industrial rather than information age.[102]

4.2.2. There is no fixed 'theory of victory' for strategic competition, so there are also no simple ways of predicting outcomes over the long game

Armed with a revised definition of strategic advantage, the obvious question is: what now? Jargon and buzzwords abound in defence establishments, but not all survive the churn of terminology and ideas and leave a lasting mark on the real world.[103] Concepts such as this will only progress beyond esoteric sources of academic interest to if they have some practical application and benefit to strategy- and policymakers.[104] The obvious answer is to pursue a comprehensive theory of victory for strategic competition, informed by an improved understanding of the characteristics of advantage. The revised definition in Figure 4.1, however, implies that it is impossible to generate a fixed 'theory of victory' for strategic competition:

- **The notion of 'victory' only makes sense in a finite game,** i.e. a contest 'bounded by time, space, and rules regarding what is permitted and prohibited', with 'agreed-on systems for scoring [that] allow players to be ranked and ordered in terms of their performance against each other' and thus entail 'unambiguous conditions for terminating the game and accepting its outcome.'[105] In a finite game, the aim is to win and success or failure can be determined when the game concludes.[106]
- **This contrasts with the notion of success in an infinite game,** i.e. a contest that is unbounded in terms of time, space and the rules of play, which players can change if they so choose. As such, 'players cannot determine when the game begins, when it ends, or how it is scored' and 'victory conditions cannot be known, nor can the ranking of the players be made in an unambiguous fashion'.[107] In an infinite game, therefore, the aim is not to win but merely to continue the play.[108]

101 Ellery and Saunders (2021); Grissom and Frank in Frank and Bartels (2022).
102 HM Government (2021).
103 Spirtas (2018); Cohen (2021).
104 Expert workshop II, 21 January 2022.
105 Frank in Frank and Bartels (2022, 145).
106 Sinek (2019).
107 Frank in Frank and Bartels (2022, 146).
108 Carse (1986).

This concept of finite and infinite games has received significant attention in recent years, especially in US strategy documents and the associated policy-making and analyst community.[109] It is a point of contention whether international competition is truly an infinite game. Strategic rivalries between major powers may last for centuries, but they can end, and some states collapse entirely.[110] Yet is certainly a 'long game' with few clear boundaries in terms of time, space or rules. This long game contains a nested series of finite games (e.g. trade disputes or wars) which shape near-term developments and contribute to, but do not straightforwardly determine, long-term trends. A 'win' in any or all these contests does not necessarily imply a position of overall strategic advantage for the long term[111]; the historical record shows that it is all too possible to win every battle but still lose the war, let alone the subsequent peace.[112]

This means it is difficult to predict which strands of relative strategic advantage or disadvantage will be decisive in a particular crisis or conflict that flares up during this long-term competition. It is similarly difficult to predict which actor will benefit the most or 'win' over the long term, especially as their own strategic objectives evolve and thus the yardsticks for judging performance are themselves repeatedly revised.[113] So, while it may be possible to define a theory of victory for a specific crisis or conflict, for the 'long game' of strategic competition we must make do with some guiding principles and historical lessons that, together, constitute a theory of success and a set of factors or practices correlated with it.

4.2.3. Relatedly, strategic advantage is all too often measured in crude, quantitative terms that ignore the role of immaterial factors, such as will to fight or luck

Just as strategy- and policymakers should be wary of beguiling but reductionist theories of victory for strategic competition – which are likely to be based on misapplication of analytic methods designed for understanding finite games to infinite (or at least long) ones – so too must they resist the instinct to reduce measuring advantage to a set of quantitative metrics and formulae.[114]

The extent to which it is possible to measure strategic advantage, and meaningfully compare competitors to determine who has superiority in a specific situation, is a longstanding point of methodological debate. As touched upon in Chapter 3, the complex nature of the strategic environment and strategic competition means that, at any one time, in any one situation, there are different actors to consider, each holding different advantages and disadvantages. Measuring by looking at the outcomes of past events only provides a snapshot (i.e. who 'won' a past territorial or trade dispute, or an outright war). It offers, at best, a partial analysis of why what happened unfolded as it did and is of limited use in predicting the future.[115]

109 Grissom in Frank and Bartels (2022).

110 Mazarr (2022b).

111 Expert workshop II, 21 January 2022.

112 Obvious examples would be the wars in Vietnam or Afghanistan, where the United States had clear battlefield supremacy but found that all its tactical and operational advantages were not enough to avoid ultimate strategic defeat.

113 Ellery and Saunders (2021).

114 Expert workshop II, 21 January 2022.

115 Nye (2011).

Typically, then, analysts have reverted to comparing actors in terms of quantitative indicators such as[116]:

- **Size of their armed forces** (measured by total number of trained personnel or major platforms and weapon systems, e.g. main battle tanks, artillery, aircraft, ships or submarines).
- **Size of their economy** (e.g. gross domestic product (GDP), or related measures such as GDP per capita or government spending on defence or R&D adjusted for purchasing power parity).
- **Size of their population** (and perhaps demographic measures, such as working-age population).
- **Aggregate measures**, such as the Composite Indicator of National Capability (CINC), which combines data on defence spending, size of the armed forces, urban population, annual production of iron and steel, and annual energy consumption.[117]

Such indicators are flawed in several crucial respects. They may rely on patchy data (e.g. given the classified nature of the latest information on military capabilities, or the fact that countries such as China have been accused of overstating GDP growth in official statistics). They often fail to address the qualitative factors that provide vital context to these raw numbers (e.g. the differences in quality of training, tactics, leadership and materiel that enable small professional militaries to defeat much larger adversary forces). While measuring and comparing some levers (such as military equipment or capability) may be more straightforward, others (such as will to fight) are much more subjective and therefore much more difficult to quantify and model.[118] Additionally, popular metrics such as troop numbers or GDP are ultimately gross indicators; they consider only assets, not liabilities. This means that international comparisons 'systematically exaggerate the wealth and military capabilities of poor, populous countries, because they tally countries' resources without deducting the costs countries pay to police, protect, and serve their people.'[119]

Comparison is made even more difficult by the fact that, in some situations, one actor's net assessment of strategic advantage may focus on completely different levers from their competitor's analysis. In such cases, there may be a fundamental disagreement as to the characteristics and rules of the competition in which these different actors are engaged, as well as a lack of robust evidence for what variables are likely to determine its outcomes. Reconciling these issues is a severe challenge for analysts as much as strategists and defence planners. Any comparison between one actor that has superiority in military capability and another that has superiority in economic strength is highly likely to be subjective and dependent on contextual factors, such as the point in time when the measurement occurs, the specific area of competition, or interaction with other levers of advantage. In this situation, determining which actor holds a position of overall strategic advantage represents a value judgement

116 Beckley (2018); Mazarr (2022a).

117 Originally created by David Singer for the Correlates of War project in 1963, the CINC is used in a large number of academic studies and informs related measures such as the National Material Capabilities data set. For more information, see: https://correlatesofwar.org/data-sets/national-material-capabilities

118 Internal analysis workshop II, 01 April 2022; Expert workshop III, 27 April 2022.

119 Beckley (2018, 9).

shaped by individual and organisational biases.[120]

It is thus not likely to be clear which advantage or disadvantage is likely to be decisive in the contest, nor how multiple levers might interact with one other to achieve an effect greater than the sum of its parts, or result in unforeseen, emergent behaviours within complex systems.[121] Similarly, the influence of fog, friction and chance – or the possibility of brilliant individual leadership or some other short-term flash of inspiration – are all likely to be left out of the equation, with quantitative measures at risk of implying a more deterministic approach to calculating outcomes.

4.2.4. Despite all these challenges, it is possible to identify factors and behaviours that often create the conditions for advantage and thereby for strategic success

Faced with the complexities inherent to the concept of strategic advantage, this study proposes a preliminary framework for classifying the myriad variables and relationships that contribute to a position of advantage in a given contest, crisis or conflict. This stops short of a 'theory of victory', for the reasons outlined above, but provides a structured framework for identifying, analysing and, where data permits, measuring those factors and behaviours that are conducive to strategic success in the context of competition.

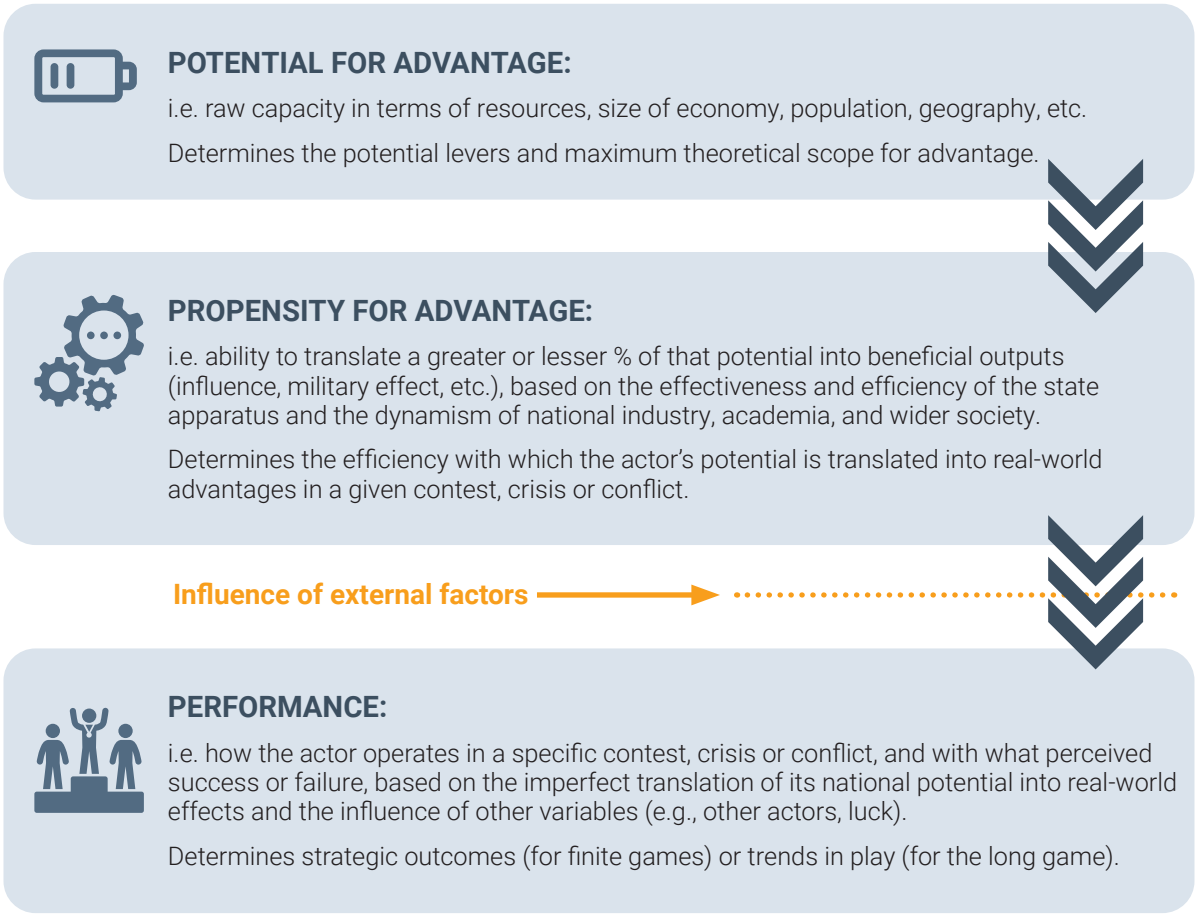
Here, a crucial distinction is drawn between an actor's **potential** (capacity) and their **propensity** (efficiency) for translating their available levers and potential sources of advantage into real-world effects. When combined with external factors, such as the actions of other actors (themselves a function of both that actor's potential and propensity) or chance, these characteristics of an actor ultimately determine the extent to which they prove able, or not, to shift the odds of achieving their strategic objectives in their favour.

This distinction is explored further in Chapter 5, which considers lessons identified from the literature and historical cases regarding which factors to consider when assessing an actor's potential or propensity for strategic advantage.

120 For example, recalling the example of the conflict between the United States and the Taliban in Afghanistan, it appears to be an obvious conclusion that the United States was, at least in the initial stage of the conflict, acting from a strong position of apparent strategic advantage, in terms of military capabilities, allies and partners, and domestic and international support. However, in time, support for continued US engagement in the conflict waned. The Taliban demonstrated a more enduring will to fight. Internal analysis workshop II, 01 April 2022; Expert workshop III, 27 April 2022.

121 Recent RAND studies for the UK MOD, specifically the Development, Concepts and Doctrine Centre (DCDC) and Dstl, examined these issues in detail, developing a Defence Value Framework (DVF) and then assessing the feasibility of developing new analytic methods for quantifying and monetising the contribution of Defence to the UK National Security Objectives in terms of security and prosperity. Cf. Black et al. (2021) and Huxtable et al. (2021).

Figure 4.2 Framework: from potential to propensity for strategic advantage


POTENTIAL FOR ADVANTAGE:
i.e. raw capacity in terms of resources, size of economy, population, geography, etc.
Determines the potential levers and maximum theoretical scope for advantage.
PROPENSITY FOR ADVANTAGE:
i.e. ability to translate a greater or lesser % of that potential into beneficial outputs (influence, military effect, etc.), based on the effectiveness and efficiency of the state apparatus and the dynamism of national industry, academia, and wider society.
Determines the efficiency with which the actor's potential is translated into real-world advantages in a given contest, crisis or conflict.
Influence of external factors
PERFORMANCE:
i.e. how the actor operates in a specific contest, crisis or conflict, and with what perceived success or failure, based on the imperfect translation of its national potential into real-world effects and the influence of other variables (e.g., other actors, luck).
Determines strategic outcomes (for finite games) or trends in play (for the long game).

Source: RAND Europe analysis.

5 Achieving strategic advantage

Building on the concept and definition of strategic advantage put forward in Chapter 4, this chapter offers a more practical discussion of the types of ways in which advantage might be achieved in the real world. First, it presents an overview of the individual strands of potential advantage, based on the PESTLE-M framework.[122] It discusses the blurred distinctions between endogenous and exogenous factors, given the complex and interdependent nature of the myriad PESTLE-M systems that constitute the basis for international competition. Second, the chapter discusses key themes emerging from the literature review, historical analysis and expert and stakeholder engagement regarding how actors translate their potential into a position of overall strategic advantage and maximise the probability of favourable strategic outcomes.

Given the scope of this exploratory study, these insights are not intended as comprehensive and definitive guidance on how to achieve strategic advantage for all actors, in all cases. Nor is it a strategic net assessment of the UK's position relative to other actors, comparing its potential and propensity to other nations. Instead, this chapter and Annexes C and D which accompany it, are intended as the basis for more detailed future research, analysis and gaming into 'what works' when it comes to advantage, and what might be the most prudent strategy for the UK – and for the MOD – in the face of intensifying competition.

5.1. Characteristics that influence an actor's potential for advantage

5.1.1. Actors have access to potential levers and asymmetric sources of strategic advantage across the PESTLE-M framework to achieve their aims

The historical case studies summarised in Chapter 3 and contained in Annex C describe a wide variety of situations in which a range of actors utilised individual strands of advantage across the PESTLE-M framework. Examples of significant such levers are presented in Figure 5.1 below. Of these, among the most frequently utilised were (i) allies and strategic partnerships; (ii) public opinion and support; and (iii) military and defence industrial capability. An analysis of these individual strands of advantage suggests that, aside from being successfully leveraged to help actors achieve strategic objectives, they often also acted as foundations around which other advantages could be developed or leveraged.

122 The PESTLE-M framework is widely used as part of futures and foresight studies, including the UK MOD's own Global Strategic Trends (GST) programme, which looks out beyond 2040.

Figure 5.1 Overview of PESTLE-M levers identified in the case studies

Influence of factors contributing to actor's propensity for advantage:
(e.g. policy decisions, societal and organisational culture, institutions)
Strength and appeal of political ideas
Public opinion and support
Alliances and strategic partnerships
Political
Technological
Access to talent and skills
Investment in R&D
Innovation and translation of new ideas
Economic statecraft
Productivity and competitiveness
Industrial and supply chain resilience
Economic
Legal
Creation of and participation in international legal and institutional frameworks
Influence over 'soft law', ethical norms, standards
Demography
Social cohesion and psychological resilience
Culture and education
Social
Environmental
Climate and energy
Geographic position
Access to resources and lines of communication
Military and defence industrial capability
Will to fight
Use of multiple domains (incl. cyber and EM, space) to project power
Military
Vulnerabilities in the grey zone
Access to intelligence
Nuclear weapons and other WMD
Influence of external factors:
(e.g. changing conditions at the international level, changes in the military offence-defence balance, changes in climate or technology, luck)

Source: RAND Europe analysis of selected historical cases. Further analysis and concrete examples are provided in the twelve case studies presented and discussed in full in Annexes C and D.

Overall, these strands of potential advantage can derive from both endogenous and exogenous factors[123]:

- **Endogenous factors:** On the one hand, actors seek to cultivate and then utilise strands of advantage through levers that are, to a greater or lesser extent, within their direct control. To affect change to their relative advantages and disadvantages across the PESTLE-M framework, some variables demand a lot of time and resources (e.g. financial, human or political capital).[124] Examples include a nation's culture, geography, population size, which though not strictly fixed may take decades or even centuries to steer in a desired direction. Other variables can be altered more much quickly, however, such as through changes in policy, doctrine or investment priorities. Examples include fiscal and monetary policy, diplomatic stances and the deployment of military forces. The specifics vary from country to country, based on factors such as national priorities, the political system (e.g. authoritarian vs. democratic systems, or level of centralisation) and budgetary constraints. But, as the most 'malleable' factors, these represent the most promising space for 'quick wins' and rapid improvisation when a strategy needs to adapt to shocks or changes in the external environment.
- **Exogenous or external factors:** On the other hand, actors also seek to derive advantage from contextual factors that lie, in large part, outside of their control. These include factors such as the prevailing trends in the international system or the actions of others – especially superpowers, who will be more able to resist most nations' efforts to deter or influence them, especially when these come from smaller states with limited leverage. Other examples include shifts in the military offence-defence balance driven by the changing character of warfare, sudden breakthroughs in technology, natural disasters or the unpredictability provided by fog, friction, and chance.

In practice, the distinctions between these factors are often blurred. In today's globalised and interconnected world, even the most autarkical national systems (e.g. North Korea) are not fully cut off from the influence of state or non-state actors in other parts of the globe – whether these are governments, businesses, academics, the media, civil society organisations or individual citizens and interest groups. Distinctions across the PESTLE-M framework can similarly be murky, given the cross-cutting nature of many policy issues. Climate change, for example, is a product of human activity but in turn also has wide-reaching effects on everything from the readiness and deployment of military forces through to economic prosperity, migration and the focus of science and technology development.

The following sections focus on discussing how these potential strands of individual advantage can be leveraged, and how a position of overall strategic advantage can be built, maintained and employed.

123 Internal analysis workshop, 01 April 2022; Expert workshop III, 27 April 2022.

124 For example, FDR's cultivation of US public opinion in preparation for the country's entry into World War II took sustained investment of political capital and engagement with a wide range of stakeholder groups to increase the institutional and industrial capacity and readiness of the United States and slowly shift public opinion in preparation for war (see Annex D.3). Similarly, China's conceptual and practical development of the BRI represents a long-term effort to develop infrastructure for exerting Beijing's political, economic, and cultural reach globally (see Annex D.2).

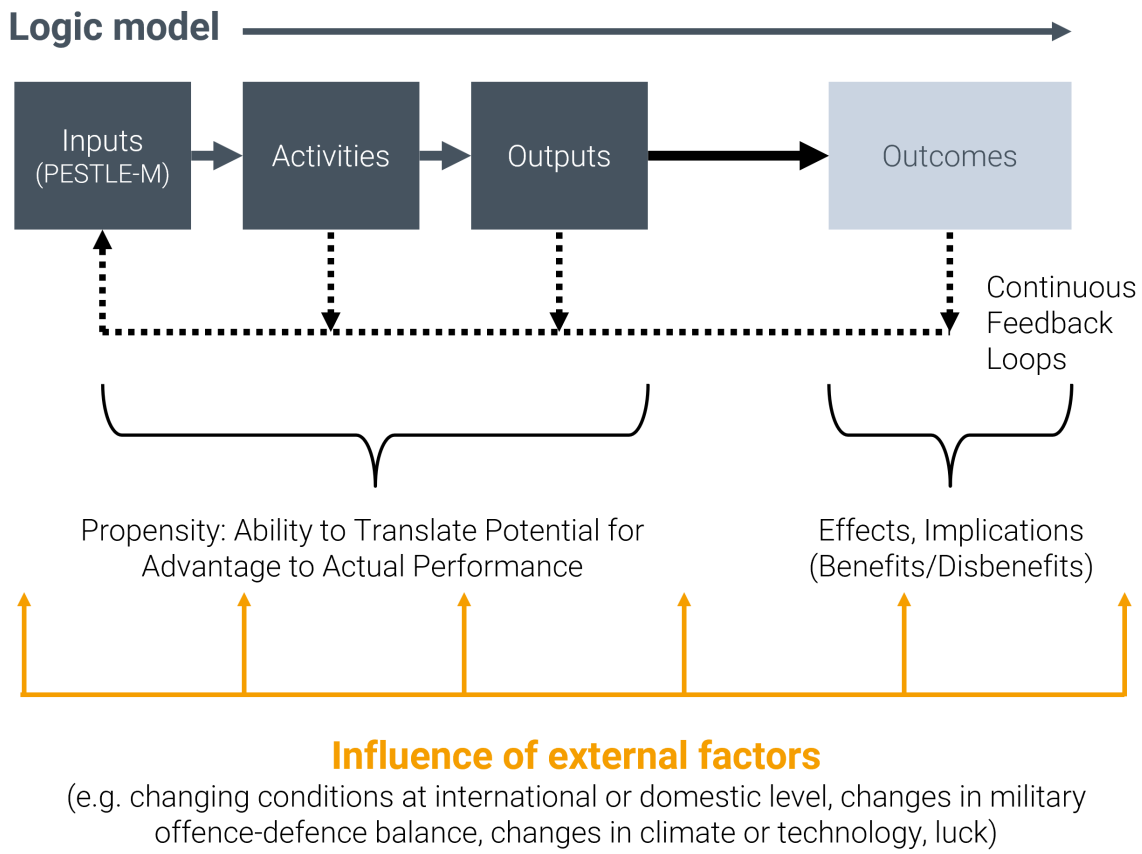
5.2. Characteristics that influence an actor's propensity for advantage

5.2.1. No nation can fully anticipate which of its levers may be most relevant to future competition or leverage its full potential, but governments can focus on increasing the nation's overall propensity for advantage

Actors typically seek to develop asymmetries between them and their competitors that they judge likely to provide maximum scope for strategic advantage, given their national potential in terms of the PESTLE-M framework. A small nation, for example, may be disadvantaged relative to a larger neighbour in terms of raw numbers of troops, but may be advantaged by superior access to precious natural resources, a more temperate climate, and political and trading links with an overseas diaspora. This would encourage a bespoke national approach to strategic competition based on maximising the country's advantages and minimising, or at least mitigating, its innate disadvantages, rather than seeking to out-compete the larger neighbour on a like-for-like basis, which would prove unfavourable.

Importantly, no actor can be certain which of its levers is likely to prove most relevant and beneficial in a given contest, crisis or competition. Even armed with this foreknowledge, a government cannot fully mobilise the national's full potential across the PESTLE-M framework as if it were a single homogenous entity with complete unity of purpose. Instead, the development and implementation of national strategy is conditioned by internal disagreements, fog and friction within government, as well as a degree of tension between the desired direction of policymakers and the divergent objectives, interests and values of other stakeholders within wider society (e.g. businesses, academia, the media, the public). The result is an imperfect translation of a nation's potential strands of advantage into actual useful output (e.g. diplomatic or military effects). This can be understood in terms of a logic model, as in Figure 5.2.

Figure 5.2 Translation of potential into real outputs, based on national propensity for advantage


Logic model
Inputs (PESTLE-M)
Activities
Outputs
Outcomes
Continuous Feedback Loops
Propensity: Ability to Translate Potential for Advantage to Actual Performance
Effects, Implications (Benefits/Disbenefits)
Influence of external factors
(e.g. changing conditions at international or domestic level, changes in military offence-defence balance, changes in climate or technology, luck)

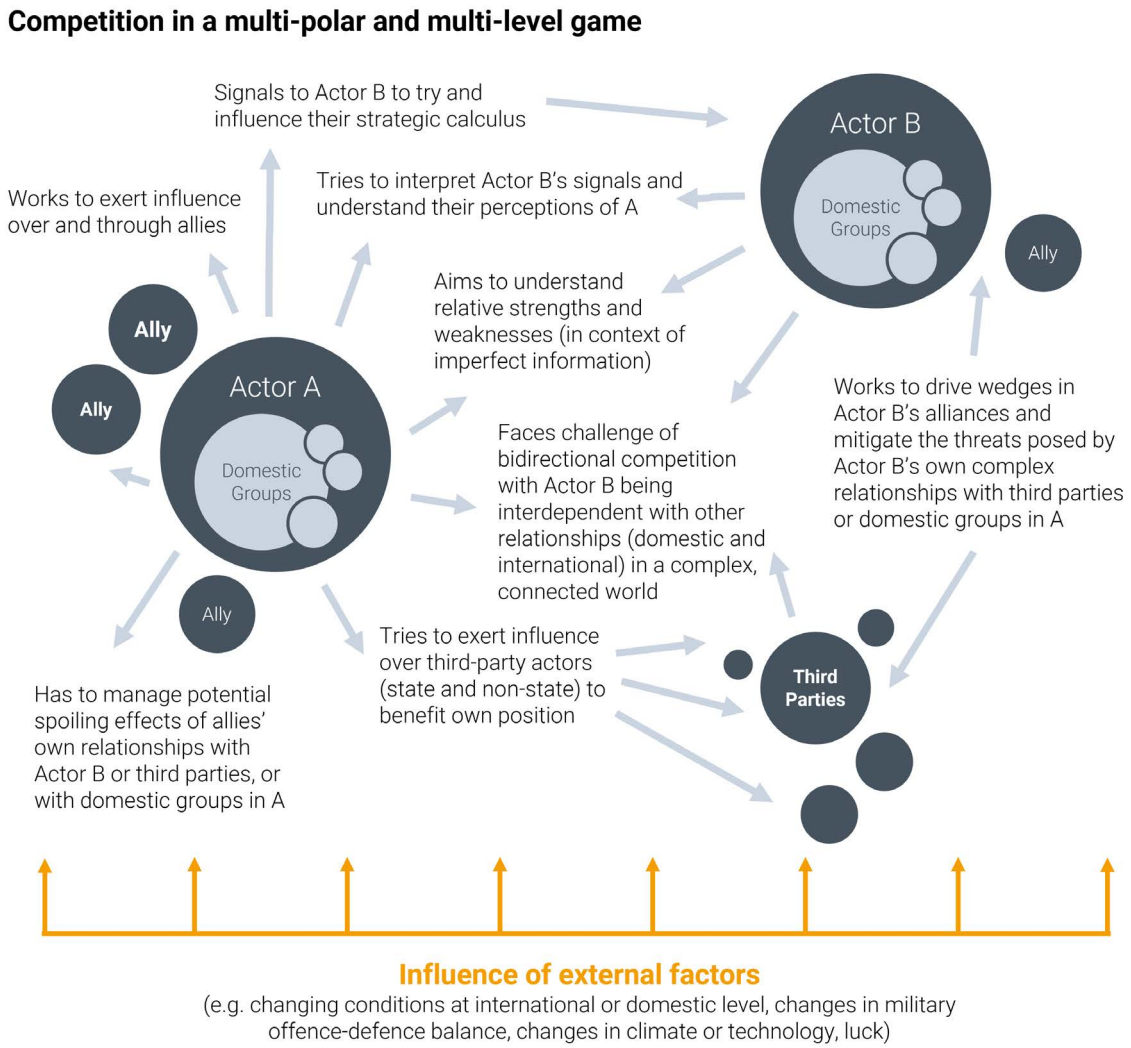
Source: RAND Europe analysis.

This shows how inputs are translated, imperfectly, through various processes (e.g. government strategy making and state-led mobilisation of industry and society's resources) into outputs, which then interact with external forces (such as other actors or chance) to determine strategic outcomes. This process of translation will be more or less efficient depending on the actor's propensity for achieving advantage – effectively, a measure of that nation's productivity as a strategic competitor.

5.2.2. To increase their nations' propensity for advantage, governments must account for and seek to influence multiple stakeholders, foreign and domestic

Before discussion moves to the characteristics associated with a highly efficient translation of national potential into tangible advantage, it is important to note that a given actor does not decide on which PESTLE-M strands to focus, or go about cultivating advantage in and through these, in a vacuum. Instead, the process of developing and implementing a strategy for achieving a position of overall advantage occurs against the backdrop of multipolarity abroad, and diverse stakeholder interests at home.

Figure 5.3 Engagement with diverse interests, foreign and domestic, when pursuing advantage


Competition in a multi-polar and multi-level game
Signals to Actor B to try and influence their strategic calculus
Actor B
Domestic Groups
Ally
Works to exert influence over and through allies
Tries to interpret Actor B's signals and understand their perceptions of A
Aims to understand relative strengths and weaknesses (in context of imperfect information)
Ally
Ally
Actor A
Domestic Groups
Works to drive wedges in Actor B's alliances and mitigate the threats posed by Actor B's own complex relationships with third parties or domestic groups in A
Faces challenge of bidirectional competition with Actor B being interdependent with other relationships (domestic and international) in a complex, connected world
Ally
Tries to exert influence over third-party actors (state and non-state) to benefit own position
Third Parties
Has to manage potential spoiling effects of allies' own relationships with Actor B or third parties, or with domestic groups in A
Influence of external factors
(e.g. changing conditions at international or domestic level, changes in military offence-defence balance, changes in climate or technology, luck)

Source: RAND Europe analysis.

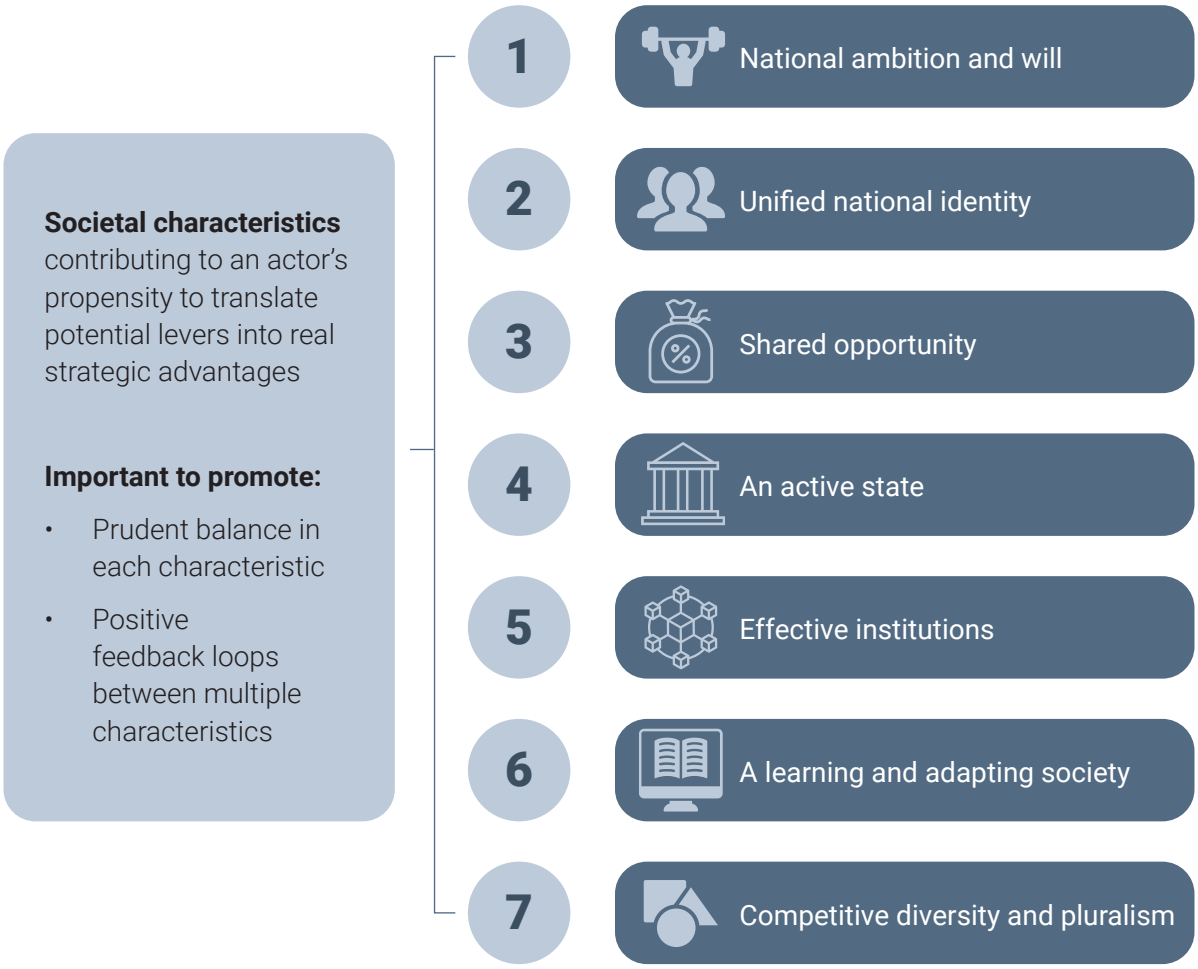
Navigating these interconnected relationships entails any government engaging in multipolar and multi-level games all at once. Any policy initiatives or investments undertaken to increase a nation's ability to translate potential strands of advantage into useful outputs and effects must simultaneously account for how these will be perceived by multiple external audiences, both friendly and hostile, and how they will be received by domestic stakeholders, such as the private sector, the media or the public. This reflects the essence of both domestic and foreign policy – and even war – as extensions of both local and global politics, which are played out in an increasingly interconnected and contested information environment in the 21st century.

5.2.3. Analysis suggests that certain characteristics are associated with actors better able to translate their potential into real-world strategic advantage

Maximising a nation's potential and propensity for advantage is ultimately an exercise in the orchestration of different levers of influence

and relationships with key stakeholders, through which central government can better grow, access and marshal the resources (i) of both the public and private sectors and wider society at home, and (ii) of allies and partners internationally.[125] The results of this study, derived from the literature review and historical case studies, complement a wider historical analysis undertaken in a recent large RAND study for the US DoD, which identified a number of societal characteristics that are especially influential in determining whether a nation can effectively mobilise its full potential for advantage.

Figure 5.4 Examples of societal characteristics associated with translating potential into advantage



Source: adapted from Mazarr (2022a).

125 This is reflected in concepts such as the UK government's 'integrated approach' (formerly Fusion Doctrine) or NATO's 'comprehensive approach'. The increasing challenges posed by cross-cutting issues such as climate change, or the hybrid threats posed by Russian and Chinese political warfare and activities below the threshold of war, have intensified interest in deeper integration across government, industry, society and allies and partners. Cf. Cabinet Office (2018); HM Government (2021); UK MOD (2021); McInnis and Starling (2021).

Both this report for SONAC and the wider RAND research for the DoD drew on historical examples to understand how strategic competition unfolds in practice.[126] While the case studies were different, given differing scopes and research questions, there is agreement between the two sets of findings in terms of:

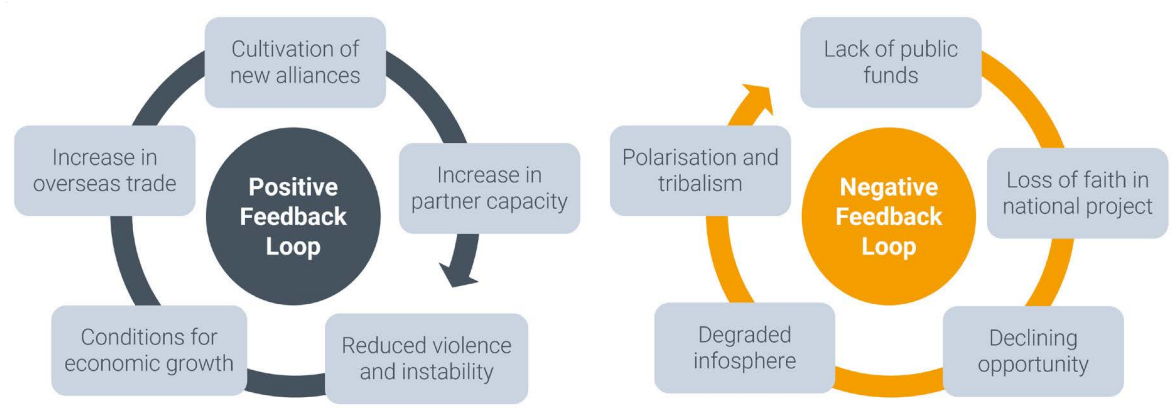
- **The importance of a prudent balance:** The literature and case studies emphasise that, while actors seek to develop and employ asymmetric advantages vis-à-vis other actors, there are increased risks as these asymmetries tend to the extreme. Without balance across different strands of advantage, an actor risks disaster if their advantages are rendered obsolete by some countermeasure or external shock. Equally, a characteristic that is beneficial in moderation (e.g. a clear sense of direction, or investment in new technology) can become a corrosive force and liability if taken to extremes (e.g. with that clear sense of direction turning into political and bureaucratic inflexibility in the face of changing conditions, or with the over-reliance on technology becoming a cyber vulnerability).
- **The influence of virtuous and vicious cycles:** Relatedly, sustained strategic success appears to stem from the presence of positive-feedback loops (virtuous cycles) across the PESTLE-M framework that enable the actor to stay competitive on a sustainable rather than transient basis.[127] Conversely, negative-feedback loops (vicious cycles) can drive an actor towards strategic irrelevance over time, despite apparent short-term successes, and ultimately result in unfavourable trends in long-term competition.[128] Figure 5.5 provides illustrative examples of how such feedback loops can emerge.

126 The DoD-funded study explored lessons for US competitiveness from the historical experience of major empires and great powers such as Ancient Rome, China (premodern and modern), Spain, Austria-Hungary, the Ottomans, Renaissance Italy, Britain, Sweden, France, Japan, the Soviet Union and the United States itself. Cf. Mazarr (2022a, 27).

127 This can be seen across several of the case studies in Annexes C and D. For example, the Great Exhibition reflected Britain's success in cultivating an ecosystem of scientific, educational, financial and industrial actors who interacted through positive-feedback loops to produce favourable conditions for new translating new ideas into technologies and applications that generated value in a variety of forms (e.g. prestige, influence, security, profit). Similarly, FDR made efforts to link domestic and foreign policy interventions to build capacity and support for eventual entry into the World War II, while Japan managed to develop its post-war economy and influence through a holistic approach.

128 For example, French military action drove Algerians towards the FLN while undermining international support for France, prompting isolation that further encouraged the FLN and pressured France to deliver a swift military solution.

Figure 5.5 Examples of feedback loops aiding or frustrating translation of potential into advantage



Source: RAND Europe, adapted from Mazarr (2022a, 301).

5.3. Good practices emerging from the historical cases

Alongside the characteristics discussed in Section 5.2, the findings of this study also suggest an indicative set of practical lessons about the types of policy interventions and behaviours that have been associated with achieving advantage in real-world historical cases:

- Building and maintaining a position of overall strategic advantage depends on effectively balancing and organising strands of advantage and disadvantage.
- Prioritising and organising multiple forms of individual advantage is tricky, necessitating an effects-based approach to compare and choose between disparate strands.
- Manipulating the nature of strategic competition is an important way of ensuring that any contest occurs on favourable ground.
- Investing in 'foundational' or broadly applicable advantages may be useful in a wide range of scenarios, compared to optimising for a specific setting.
- Building and maintaining a position of overall strategic advantage requires a clear strategic vision.
- Building and maintaining a position of overall strategic advantage is contingent on leveraging networks of allies and partners.
- Maintaining strategic advantage depends on effectively employing strands of advantage at the right time and place – cultivating an advantage does not matter if it is squandered at point of use.

These good practices are discussed in detail in Annex C, including examples from the twelve historical case studies, alongside preliminary suggestions for types of ways in which the UK might enhance its own position to achieve advantage. These are shown in Figure 5.6. (Given limits on data and research scope, these are not intended as a comprehensive set of recommendations, but rather as areas for further investigation.)

Figure 5.6 Preliminary suggestions for the UK to maximise its own propensity to achieve advantage

1. Use strategic partnerships to shoulder the weight of competition/conflict and to overcome limits on national capabilities.
2. Use partnerships of convenience to adapt to the changing operating environment and to achieve different goals at different times.
3. Use different instruments to favourably shape public opinion at home and abroad.
4. Use different instruments to enhance power projection abroad.
5. Use different instruments to enhance and leverage the potential of science and technology.

Source: RAND Europe analysis.

5.4. Emerging issues and the future of strategic advantage

This final section draws together themes from across Chapter 5, focusing on unresolved issues and challenges for future efforts to achieve strategic advantage in the digital age.

Collectively, the characteristics and good practices associated with success suggest a need for a more flexible, adaptable and robust strategy process – one geared towards the new opportunities and challenges of the information age, rather than constrained by the old structures and assumptions of the industrial age from which current governance models at both the national and international level were derived.[129] The shifting dynamics of competition in the 21st century pose challenges to institutions such as the UN, NATO, national governments and armed forces (including in the UK). These originally evolved to meet the requirements of delivering strategy and policy in the very different conditions of the 19th and 20th centuries. Barriers to achieving strategic advantage include:

- **Institutions that are configured towards linearity not complexity,** built around stovepipes and shaped by an organisational culture and set of political and financial decision-making cycles that often encourage short-termism and risk aversion.
- **Societies that are experiencing a confluence of challenges and threats** – such as climate change, the impact of disruptive technologies, or political and economic warfare – that are by nature complex and ambiguous, and cut across different organisations and the PESTLE-M framework.
- **Increasing pressure to deepen collaboration and integration** with a wide range of cross-government, military,

129 Ellery and Saunders (2021).

industry, academic, civil society and international actors to deliver effects using all instruments of power and mobilising all of society's resources.

- **Continuing shifts in power and influence away from the public sector** towards the private sector, which now drives the bulk of technological innovation and is increasingly challenging the primacy of the nation-state (e.g. through the privatisation of violence, the extensive influence of tech firms over the infosphere and the exploitation of new domains such as space by commercial actors).

Such issues have growing implications for the future of how strategy- and policymakers and analysts think about and pursue strategic advantage:

- The 'traditional bases of national power' – such as the gross military and economic indicators discussed in Chapter 4 – are of declining relevance in the information age, compared to factors such as access to digital technologies and skills, or the ability to leverage global networks.[130]
- The increasing role of non-state actors emphasises the need for new analytic methods and indicators to measure and compare the potential and propensity of competing but interconnected national *ecosystems* (e.g. comparing the UK's and a competitor's abilities to mobilise both public and private sector resources in a crisis, given trends such as growing reliance on globalised supply chains for raw materials and key enabling technologies).[131]
- The increasing multipolarity of the international system exposes limitations in current thinking around topics such as deterrence, signalling and escalation management. Many of the methods in this area remain focused on managing dyads, i.e., bipolar competition (as reflected in the evolution of game theory to address US-Soviet competition in the context of Cold War), rather than the exponentially more complex interactions between three or more competing actors.
- The increasing focus on integration – across PESTLE-M systems, organisations and alliances – as a basis for defence and deterrence strategy raises questions about how to track, coordinate and de-conflict activities occurring across multiple levers of power, especially when these occur outside government or the military. Otherwise, these different efforts might unwittingly undermine efforts to achieve strategic advantage due to a lack of visibility and coherence.
- This is especially important when thinking about relationship and escalation management in the information age, as actions by one part of government or society may have unintended second- or third-order effects that undermine parallel efforts to promote advantage.
- Increasing interconnectivity also implies a need to continue improving how strategists and analysts alike account for the unique dynamics of strategic competition in and through emerging domains and under-governed spaces, such as the High North, Antarctica, cyberspace or outer space.

130 Tellis et al. (2010, iii).

131 Mazarr (2022a, 2022b). There is, similarly, a continuing need to extend the evidence base to gain a deeper understanding of how the dynamics of strategic competition and advantage may differ for non-state actors (building on this study's examination of the cases of the IS in Iraq and FLN in Algeria).

There are no simple solutions to these challenges, and it is beyond the scope of this short study to seek to address them in full. It is nonetheless important to conclude Chapter 5 with this look to future barriers to achieving advantage, given all that has been said in this report about the need for thinking about this topic to be continuously stress-tested and refreshed to reflect ongoing shifts in the dynamics of international competition. Building on this forward look, Chapter 6 draws this study to a close and discusses next steps.

6 Conclusions and next steps

The main objective of this report has been to explore the concept of strategic advantage to support the MOD and wider UK government in developing a more comprehensive understanding of the topic. Chapter 2 sought to place strategic advantage in context, by analysing its connection with academic theory and concepts such as strategy and strategic competition. Chapter 3 gathered the themes and conclusions that emerged from the twelve historical case studies and the expert consultations held throughout this study. In doing so, it explored the idea of strategic advantage in more detail, breaking down and analysing key characteristics, as well as the necessary components and conditions to building and maintaining a position of overall strategic advantage. On this basis, Chapter 4 then proposed a refined definition, taken forward into a discussion of lessons on achieving advantage in Chapter 5.

This concluding chapter focuses on providing suggestions as to where and how the revised definition of strategic advantage could be applied, as well as potential areas that could benefit from further investigation.

6.1. Conclusions

This study has provided a revised definition of strategic advantage, as outlined in Figure 6.1.

The literature review, historical case studies and engagement with experts and stakeholders from across academia, government and the military have also emphasised several recurring themes, as captured below.

Figure 6.1 Revised definition of strategic advantage

Revised definition: strategic advantage

"A position of strategic advantage is one in which an actor is more likely than others (whether hostile or friendly) to achieve their objectives in a given contest, crisis or conflict, having influenced the dynamics of competition in their favour and maximised the relevance of their own areas of asymmetric advantage across all levers of power."

Source: RAND Europe analysis.

6.1.1. A position of overall strategic advantage is comprised of individual strands of advantage or disadvantage, relating to all available levers of power

As described in Chapters 2 to 5, a position of overall strategic advantage is a reflection of the total sum and balance of advantages and disadvantages that the actor in question holds, relative to one or more competitors, in a given situation.[132] The individual advantages that support this position are levers that the actor can utilise to manoeuvre in the context of strategic competition.[133] These levers can run across the PESTLE-M framework, and represent the elements of a country's national power. As discussed in Chapters 4 and 5, these levers can be both material and immaterial. Because of this, perception can play a significant role in building, maintaining and employing strategic advantage. Further, some can be changed (e.g. based on investment choices), while others are largely fixed for the long term (e.g. geography).

Successfully building, maintaining and employing a position of overall strategic advantage depends on an ability to effectively balance between advantages and disadvantages; prioritise which advantages should be developed and invested in, based on an analysis of which would best contribute to achieving the actor's strategic objectives; and accurately orchestrate the development and employment of these advantages. Chapter 5 outlined characteristics and good practices that historical examples have shown to be useful when seeking to maximise a nation's propensity for advantage, i.e. its ability to translate its potential strands of advantage into real-world effects that contribute to national strategic objectives.

6.1.2. A position of overall strategic advantage is time-dependent, but can be 'future-proofed' to hedge and mitigate the risk of being overtaken by a competitor

Strategic advantage is not a permanent position, characteristic or asset; it is also not a linear, deterministic action that can be carried out at different times with the expectation it will have the same intended effect. In general, the value of a given strand of advantage diminishes in time. This is due to changes in the strategic and operating environment, including those generated by competitors acting to counterbalance the advantage that one actor holds, either by tackling it head-on or offsetting it. Maintaining a position of overall strategic advantage therefore depends on an actor's ability to adjust to long-term trends, as well as to be flexible and adaptable when engaging in competition in the short term. This entails employing, developing and discarding different individual levers as needed.[134] Anticipating potential future changes, monitoring the competition, maintaining situational awareness of the strategic and operating environment, and being able to quickly adapt to changing circumstances are all essential components of 'future-proofing' strategic advantage.

6.1.3. A position of overall strategic advantage is context-dependent

In addition to being time-dependent, the individual strands of strategic advantage are also highly dependent on context. The same characteristic or resource that may provide an advantage in one situation relative to

132 Expert workshop III, 27 April 2022.

133 Expert workshop II, 21 January 2022; Expert workshop III, 27 April 2022.

134 Expert workshop III, 27 April 2022.

one actor or group of actors, may act as a disadvantage elsewhere.[135] It should therefore not be assumed that a generic position of strategic advantage can be developed against, or applied to, multiple groups of adversaries, competitors or situations. This mirrors the important distinction drawn in Chapter 2 between a 'strategy in the milieu', which is about preparing as best as possible to meet open-ended challenges and opportunities, and a 'positional strategy', which is tailored to a specific situation or threat.

6.1.4. A position of overall strategic advantage can relate to both adversaries and friendly actors, given competition represents a broad continuum of relations

A position of strategic advantage can be built not only in the context of adversarial competition or even war, but also in the context of friendly, comparatively low-stakes competition with allies and partners. This is particularly relevant in the case of an actor striving to maintain its position in the international system of states, which is made up of adversaries, allies, partners and neutrals. In addition, cooperation has proven to be an effective instrument for building and maintaining strategic advantage, for instance by pooling and sharing finite resources and capabilities with likeminded allies, by specialising in areas that offset a partner's weaknesses, or by otherwise contributing to collective defence and deterrence.

6.1.5. A position of overall strategic advantage should be guided by clear strategic objectives, recognising that 'advantage' is not an end in and of itself

Strategic advantage should not be conflated with strategic objectives. Instead, it should be viewed as a means to achieve these objectives and to protect an actor's national interests and values. Building and maintaining a position of overall strategic advantage requires an understanding of what long-term strategic goals this position is intended to serve – advantage ultimately being a means to an end. This will be essential to determining what capabilities are needed, and therefore which strands of individual advantage need to be prioritised over others when it comes to development, orchestration or employment. Strategic objectives can and should include those of enhancing or maintaining one's position on the global stage, in a specific domain of competition or geographic region, or vis-à-vis a specific competitor or group of competitors.

6.1.6. A position of overall strategic advantage should be integrated into a grand strategic vision, and coherent with its underpinning theory of strategic success

A position of overall strategic advantage should ideally exist within the framework of a grand strategic vision. This requires an understanding and articulation of the national interest and values, of the role that the actor intends to play in the international system, and of how competition works and how the chosen strategy will exploit competition dynamics to achieve the desired outcomes (i.e., a theory of success). This ensures the position is reflective of the actor's value sets and long-term ambitions, as well as enabling a whole-of-government approach and a synchronised effort in building and maintaining strategic advantage.

In practice, however, achieving broad agreement on a strategy and effective

135 Expert workshop I, 20 January 2022; Expert workshop II, 21 January 2022.

implementation, cooperation and orchestration across government, the private sector and wider society is hard. As such, nations and other complex, multistakeholder organisations are rarely, if ever, able to bring their full potential for advantage to bear; instead, they must deal in messy compromises and aim for imperfect but 'good enough' responses to unfolding contests, crises, or conflicts.

6.1.7. A position of overall strategic advantage does not guarantee success

While having a position of overall strategic advantage means that, in a given situation, the actor holding this position is more likely than its competitor to achieve their objectives, success is far from guaranteed. Rather, the outcomes of the competition will be determined by the individual advantages and disadvantages that the actor holds and how these interact with those of its adversary and with the environment in which the competition takes place, as well as the impact of fog, friction, and chance.

6.2. Applying the definition of strategic advantage

There are three main ways in which this improved understanding supports ongoing work within the MOD:

- **Helping to understand how a UK position of overall strategic advantage could manifest**, as well as contributing to the conversation on the main levers and capabilities that would be needed to support it. This should be done in conjunction with an understanding of the UK's national interest, its strategic objectives, and the position it wants to occupy in the international system. Vital groundwork has already been laid by the 2021 Integrated Review and Defence Command Paper; however, there is a timely opportunity to re-visit some of the assumptions underpinning those documents amidst the ongoing stocktake of defence strategy within the MOD, and the need to ensure the implications of the recent Russian invasion of Ukraine are considered. Preliminary suggestions are provided in Annex C, based on the case studies, but there is scope for more comprehensive and robust research and analysis to generate actionable recommendations.
- **Helping to communicate and institute a common understanding of strategic advantage**, with its key characteristics, across not only the MOD, but also across government, and, externally, most notably across allies and partners who are grappling with similar conceptual issues.
- **Guiding further research, gaming, and analysis to ensure that current strategy and policy documents are coherent with the characteristics of strategic advantage emerging from this report**. This forms part of Phase II of this project, which RAND will be delivering to SONAC.

In these ways, the definition could support the following areas of activity:

- **Strategy and policy development, orchestration, and implementation:** As explained in detail in Chapters 3 to 5, a position of overall strategic advantage should not be conflated with, but instead should be guided by, strategic objectives; it should also ideally be integrated into a grand strategic vision, even if this must necessarily be flexible enough to adapt to changing circumstances. The revised definition of strategic advantage could therefore support strategy and policy development, by enabling decision-makers to envision how a position of overall strategic advantage vis-à-vis a specific competitor or group of competitors

could manifest in the case of the UK. It could also guide thinking on what the components (individual strands or levers) of such a position may be, how they can be developed, and how they should be prioritised. In this sense, the definition could help to establish future strategic priorities in a manner that is more coherent, providing a conceptual basis for adjudicating between competing requests for finite resource from across government.

- **Force and capability development:** In helping policy and decision-makers to envision a position of overall strategic advantage and its main components, the definition can also support the selection and prioritisation of specific levers and capabilities that need to be developed or invested in. This could range from developing new technologies or new equipment, to adapting military training, to modifying the force structure or posture in a particular geographic area. Having a common definition and a common vision of how a position of strategic advantage should manifest in a specific context against a specific competitor could also help guide a joint, multi-domain and whole-of-government approach and therefore generate a more united and synchronised effort.
- **Investment in R&D:** Similarly, the revised definition of strategic advantage could be used to help guide and support investment decisions in R&D and could help to generate a common (and mutually beneficial) understanding and vision between government and industry and academia.
- **Engagement with allies and partners:** As explained in detail in Chapters 3 to 5, allies and partners can have a significant role in building and maintaining a position of strategic advantage. By helping to generate an understanding of how such a position could manifest, the definition could support the identification of relevant partners with whom the UK may want to develop or deepen relations. In addition, as already mentioned, it could support collaboration with allies by helping embed a common understanding of strategic advantage as part of national concepts and doctrine or NATO Allied Joint Publications.
- **Deterrence and signalling:** By aiding adversaries or competitors in understanding how the UK views and approaches strategic advantage, the definition could enable the country to effectively signal red lines, or to use a future position of strategic advantage as an effective deterrent.

6.3. Areas for further research

In addition to the planned Phase II of this project, the study team has also identified several additional areas where further research would be needed or useful in shedding light on the concept of strategic advantage and how a position of advantage can be built, maintained and employed:

- **The role of perception in strategic advantage:** As explained in detail in Chapter 3, immaterial factors such as perceptions, beliefs and intent can all influence efforts to develop, maintain and successfully employ strategic advantage. However, while this appears to be recognised by experts, there is little acknowledgement or discussion of it in existing literature and research. Further research on the role of perception – and misperception – in strategic advantage may therefore unearth important perspectives on the concept. It may be useful to conduct research or gaming and modelling to examine the role that bluffing

(i.e. lying about a capability or advantage) may play in generating or maintaining advantage, and therefore the extent to which the ability to bluff or to influence competitors' perceptions could be considered a source of strategic advantage in itself.

- **The conceptualisation of strategic advantage from the perspective of the UK's competitors:** Successfully building, maintaining and employing a position of strategic advantage requires consideration of other actors' understanding of strategic advantage and approach to strategic competition or conflict. Recent RAND research has taken steps to understand competition through the lens of the UK's main geopolitical competitors and adversaries: Russia, China, Iran and North Korea.[136] There would be merit in deepening this analysis, for example through gaming, and in broadening it by exploring strategic advantage through the lens of hostile non-state actors, given the substantial asymmetries between their levers of power and those available to the UK.
- **'Future proofing' strategic advantage:** As explained across Chapters 3 to 5, strategic advantage is a dynamic, time- and context-dependent position. As such, a useful area of further research may focus on the ways and means of 'future proofing' strategic advantage, with the aim to: (i) ensure that a position of strategic advantage is developed with an understanding of what factors and future trends are likely to affect (and how they are likely to affect) the dynamics of strategic competition, the strategic and operating environment, and the specific arena where competition will be held and the adversaries and competitors that the UK is likely to face in future years; and (ii) ensure that a position of overall strategic advantage, once gained, can be maintained by remaining aware of, and sensitive to, changes in the above. Useful methodologies could include horizon scanning, futures and foresight methods, wargaming, and others that aim to maintain awareness, anticipate change, and, in general, make sense of the operating environment.

136 Black et al. (2022); Mazarr (2022b).

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Case study 1: Russia's Use of Hybrid Warfare in Ukraine (2014–2021)

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